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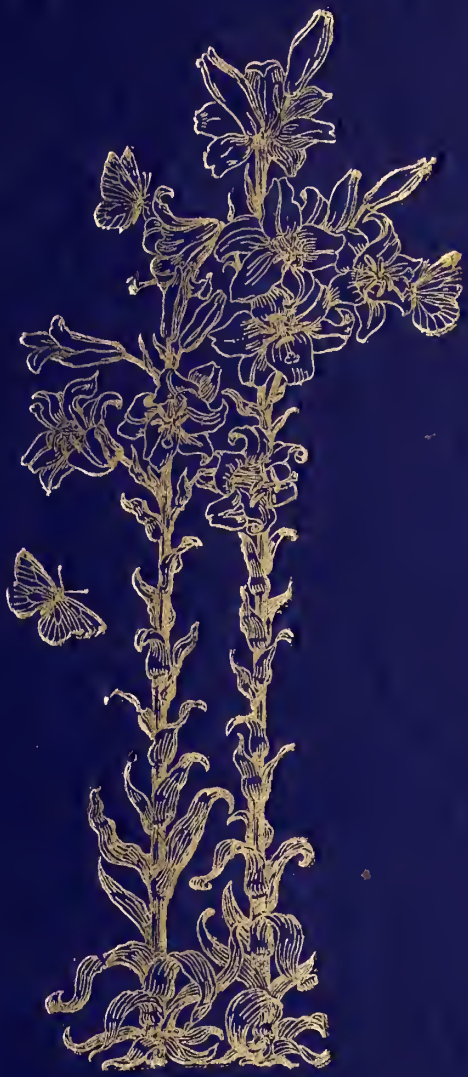

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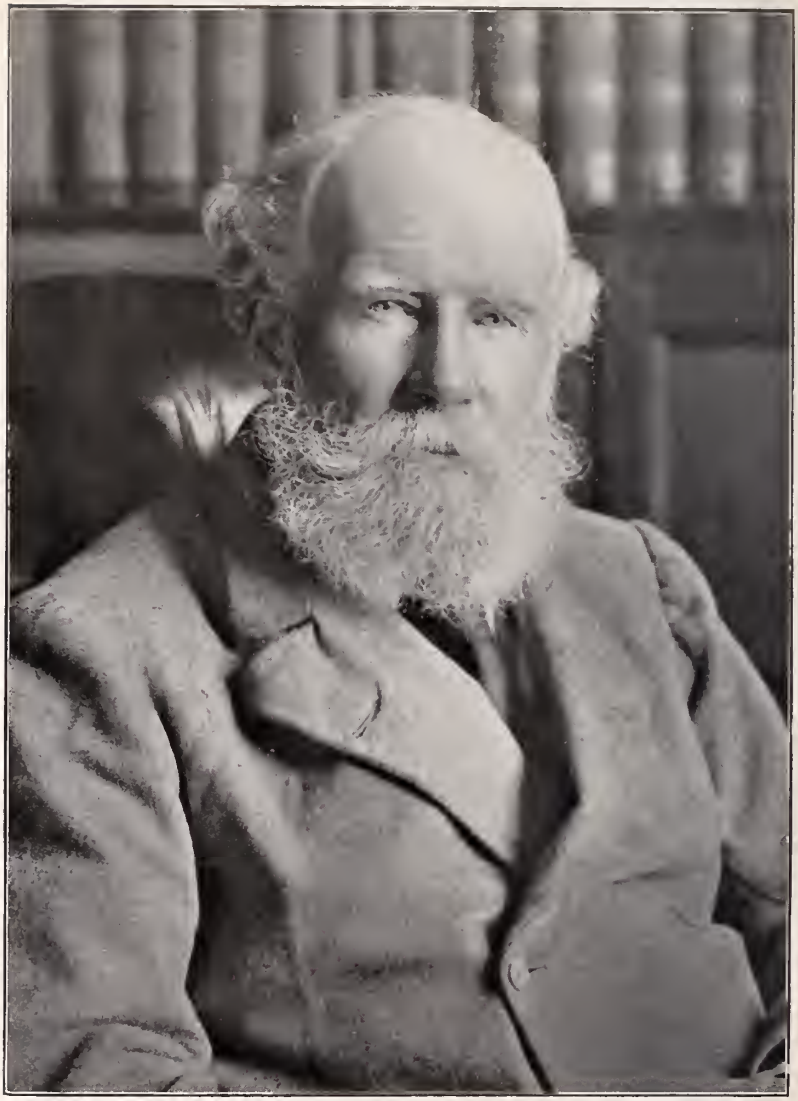

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THE RIGHT HON. LORD AVEBURY,

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With which is incorporated "The Field Club."

EDITED BY

G. S. BOULGER, F.L.S., F.G.S.,

Honorary Professor of Natural History in the Royal Agricultural College, and Lecturer on Botany and Geology in the City of London College,

AND IN HIS ABSENCE BY

WILFRED MARK WEBB, F.L.S.,

Lecturer on Biology and Nature Study to the Surrey County Council.

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Nature Notes:
The Selborne Society's Magazine.

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EDITORIAL.

THE Council are most desirous that the Magazine, whilst remaining in every sense the organ of the Society, should appeal to the general public, and thus serve to enlist new recruits for our work. Some slight alteration has accordingly been made, as our readers will perceive, in the order in which our contents are arranged; but we wish also to introduce some changes in the matter of those contents, in accordance with suggestions kindly made to us. For the benefit of the tyro we hope to have a series of short articles giving simple directions as to the collection, preservation, identification and study of the various groups of plants and animals. Short tours in our Natural History Museums and public gardens will also be described. There are, we know, many Members of the Society who have made special study of the different subdivisions of the Animal and Vegetable Kingdoms, and are fully competent to instruct their fellow-members in the subjects of these studies; and we appeal to them to help us in this matter by contributing short articles of the kind above-mentioned. It is especially desirable also that the conductors of our field rambles or other excursions should send, well in advance, some suggestion as to what is likely to be seen by those present on these occasions, whether of Natural History or of archæological interest. The tastes of our Members are undoubtedly varied; but they must remember that the making of converts to their own particular hobbies must depend largely upon their own co-operation with the Editor in proving the attractiveness of those pursuits.

THE LOWER LEA VALLEY AND ITS PRESERVATION AS AN OPEN SPACE.

LITTLE change has passed over the upper reaches of the valley of the River Lea since the far-off day when Piscator, Venator and Auceps, of "The Compleat Angler" fame, walked its banks and gravely vied in extolling their respective arts. Miles to the southward the marshes are hemmed in by East London proper on one side, and "London-over-the-border" on the other. The further south you proceed the less definite does the border become, but a gulf of open land there still is between Homerton, Old Ford and Bow on the west, and Stratford and Leyton on the east.

"The Hackney Marshes" is the general designation of this large area, which, though so close at hand, is comparatively little known. It has many features which might well excite the attention of the antiquarian, and possesses scenic effects not unworthy an artist's touch. Skeletons of animals of prehistoric date have been disinterred from the gravel-beds which lie on the border of the marsh land, and not many years ago the hulk of a Danish warship was dug out of an old river-bed, thus authenticating early records, which tell us that the valley of the Lea was the favourite passage of entrance for the Northmen when they left the Thames, up which they had sailed to over-run the south-midland districts of England.

At time of sunset on a summer's evening a golden haze overspreads the green meadows lined here and there with willows and hawthorn hedges. After they have put on their spring verdure the pastures are still of as emerald a colour as any others miles away beyond the reach of human sight and sound. White cottages and old farmsteads still are dotted over the marsh; and willow-herb, meadow-sweet and comfrey still line the banks of the creeks and dykes that intersect it.

The northern portion, above the dividing line of the Lea Bridge Road, has been placed under control, regulated and devoted to public recreation for many years past. The southern half, to which I am now drawing particular attention, is still more or less in private hands. No small acreage is occupied by the reservoirs of the East London Water Company (when it bore that name). This will keep a certain area unbuilt upon. Some portions are devoted to farming of a sort, and market gardening. There is a very large tract of pasturage known as the Leyton Lammas Lands—a term dating from the time when every stock-owner had the right of turning out his animals to graze on hay-growing or agricultural land from late summer harvest to springtime. Some rights of that sort still survive; but the broad fields of wheat long since have disappeared, though hay crops there are in plenty.

Even now, on the eastern edge of the marsh, old houses and

gardens may be found much as they were a hundred years ago, and the surroundings of the old parish church of Leyton—a curious medley of architecture in all its stages—make it difficult to realise how near one is to a dense population, across the marshes and close by.

It need hardly be said that the fit and proper destiny of as much of this great open space as is possible, is preservation in the condition in which it now is, for public enjoyment. So far, fortunately, it has escaped falling into the hands of the builder of small cottage property; but a most decided danger there is lest no small portion of it should be absorbed for the creation of smoke-producing factories on a large scale.

This danger is by no means an imaginary one. In this lowest or southernmost portion of its course the River Lea divides into several branches. The westernmost or main stream, known as the Navigation Canal, is provided with locks, and it forms the dividing line between Middlesex and Essex. East of this the main line of the Great Eastern Railway crosses four other streams, which are not locked but are tidal, known as the Pudding Mill, City Mill, Waterworks and Channel Sea Rivers. Nothing in the way of prevention seems to make inner London less smoky or foggy than it is in the dead calm of autumn and winter; but the parental care of the late Metropolitan Board of Works (now continued by their successors the London County Council) many years ago abolished smoke-producing factories beyond a certain radius. Here, down at the bottom of the Lea Valley, factories of this nature flourish in abundance. They line the tidal creeks in long rows, the reason for their position being obvious, namely, on account of facilities of water-carriage thus offered. The ground in this neighbourhood has been raised above its former level, so that its surface lies even with the metals of the railway which skirts it. The industries are principally the manufacture of oil, soap, paint and chemicals. The output of waste products is very large, and scientific or commercial ingenuity seems to have found no use for them. Year after year has this filling-up process gone on, and the creeks now run in between deep banks. This gives the impression of a process of erosion having taken place. The wild-looking and unkempt acreage lying round and about the factories is perhaps the nearest approach to Black Country scenery the neighbourhood of London possesses. Desolate-looking in winter, the plain, notwithstanding its made-up soil, waves green with grass in spring and summer, and even our commoner wild flowers do not forsake it.

This waterside land is advertised to let for factory-building purposes, as a notice-board meant to catch the eye of railway travellers tells us. Now, without prejudice to the idea of providing as many sources of occupation as possible to a centre, the population of which is suffering terrible hardships from want of occupation at present, it would be just as well to limit the

building of factories within reasonable degrees. Apart from the fact that a fine open space, so much needed for the supply of pure air to the neighbourhood, is being irretrievably ruined, it is difficult to understand what is the use of creating further sources of industry, when the founts of labour-demand from many of the very many now in existence run only too feebly. Comparatively recently a large jute factory, once prosperous, had to be shut down, and the shortage of work to be obtained at the docks on the Thames not far off is matter of daily comment in the newspapers.

Accurate information as to the manorial rights (if any) over these marshes is very difficult to arrive at. It appears that the Manor of Stebonheath (an early name for Stepney) originally extended from Stepney to Tottenham, and that the Manor of Hackney was carved out of it.[1] The rights of these two Manors —assuming the fact of their existence — over the Hackney Marshes and the whole lower valley of the Lea is an unknown and doubtful quantity. Sir Robert Hunter, in his article on "Commons," in the new volumes of the "Encyclopædia Britannica," vol. xxvii., p. 169, tells us that: "The Hackney Marshes, and other so-called commons of Hackney, are really common fields or common meadows, and along the valley of the River Lea a constant succession of such meadows is met with. They are still owned in parcels marked by metes; the owners have the right to grow a crop of hay between Lady Day and Lammas Day; and from Lammas to March the lands are subject to the depasturage of stock."

So far as it goes this information is satisfactory; but it does not get rid of the fact that the land, though commonable, is in private hands, nor does it negative the supposition that manorial rights exist. The existence of the ugly row of factories upon which I have already dwelt is sufficient evidence to show that interests of ownership or manor have fallen an easy victim to the wiles of commerce.

To sum up: Here is a large open space, the effect of which is to supply a volume of fresh air to the two great areas of population between which it lies. That on the west—East London proper, with the one exception of Victoria Park, possesses no open spaces at all. That on the east, consisting of West Ham, Stratford and Leyton, is capable of limitless extension still further east. Much is made of the benefits of Epping Forest so far as Greater East London is concerned; but those who know this district thoroughly are only too well aware that the land in these parts that can be built upon is greatly in excess of that which cannot. Besides, much of the Forest consists of true woodland, which, though beautiful to look upon, has not the hygienic value of a space on which timber is sparse.

[1] For this fact I am indebted to Mr. Moon, Librarian to the Leyton District Urban Council, who has kindly taken trouble for me in the matter.

There can be no two opinions as to the necessity of placing this large marshland area under the control of the London County Council for the enjoyment of the public. Any manorial rights (if existent) may give some trouble to buy up. Private owners may prove easier to deal with, except where water frontage comes into question. The district as a whole is not suited for a vast building estate, else it would have come into the property market long ago, though there is little doubt that cottage building must go on in the proximity of factories. Having thus pointed the way, I have little doubt that all those bodies interested in the preservation of open spaces will follow up the indications I have given for the acquisition of an open space that would crown the record of this great work so far as London is concerned.

ARCHIBALD L. CLARKE.

RED ROBIN.

SOME INCIDENTS IN A SMALL LIFE.

T the first sign of frost he perched outside my window, a gay, pert bird, with ruffled red breast and searching eye. Knowing why he had come, I opened my window and put out some crumbs on the sill, from whence they quickly disappeared. After the first two or three days, during which he was rather shy of me, he became so confident as to enter the window, and then seemed greatly surprised at his bravery. Once inside, however, every vestige of alarm that might have remained, vanished. He hopped on to the table and examined the things thereon with a critical eye. After sampling a few, he was convinced that the bread was the best, and at once made a keen onslaught on a loaf, a meal big enough, I think, to gratify any robin. His hunger satisfied, he began to preen and clean himself, his peculiar actions affording me much amusement. This done he actually started to sing, as if in reward of my kindness, finished abruptly, and flew through the open window into a tree just outside—his favourite perch. No other robin dared venture into my garden : he regarded it as his own special kingdom, aud kept it as such. Woe betide the unwary, strange robin, that ventured within its sacred precincts ! He would be driven back by the jealous occupant, and be only too glad to beat a hasty retreat. The frost continued for some time, and I now regarded red robin as a regular visitor. Meals would have seemed dull indeed without his cheery presence. During the time he visited me he had become so tame that he would perch on my shoulder or take crumbs from my hand. His curiosity and anger were aroused once, and only once, by the sight of a coloured plaster cast of one of his own kind standing on the

mantelpiece. He flew at it and collided with a crash; this he did two or three times, and after having all the breath knocked out of his body, desisted, and regarded his adversary with a woeful eye, wondering, no doubt, upon the hardness of the knocks he had received from that stiff and still member of his tribe. In the future the plaster bird was given a wide berth. At last the frost came to an end and robin's visits to my table became less frequent, but I always saw him diligently searching the garden for insects, stopping at intervals to give his sweet song. In the early spring another robin appeared in the garden, in company with red robin, who was now bent upon matrimonial matters. He was so busy he had no time to visit me. They built their nest in the thick ivy-clad wall just above my window. In this Mrs. Red Robin laid five beautiful little eggs and devoted herself to the hatching of her brood, assisted by her loving mate. It was a proud and happy pair that allowed me to look in their nest one morning and see lying there five naked little robins. Now came the hardest task of all, that of supplying the wants of their chicks. All five were, however, successfully reared and left the nest. Robin and his mate continued with me some time afterwards, but left at last. There is no doubt, however, that he will return again to share his meals with me, remembering the kindness he had received at my hands, for which he was truly thankful.

L. G. CORNER.

REVIEWS AND EXCHANGES.

Notes on the Life History of British Flowering Plants. By the Right Hon. Lord Avebury. Macmillan and Co. Price 15s. net.

We remember that, in the preface to the first edition of the *Student's Flora*, Sir Joseph Hooker expressed a hope that some day the purely anatomical distinctions which find a place in such works might be supplemented by notes on the life-history of the plants. This want he has himself, to some slight extent, supplied in later editions by the addition of such brief characterisations as "wind-fertilised, self-fertilised, protogynons," &c.; but it has been left to our President to fill the hiatus in the literature of British botany more completely by the present volume. It forms a handsome library volume of some 450 pages, with more than 350 illustrations in the text (two of which we are permitted to reproduce here), and has a glossary of the technical terms employed. Though it is a pleasure to turn over its thick pages and to read its large type, we hope soon to see it accessible to a larger public in a cheaper edition, and we are greedily anxious for the additional detail which the author could give us by the use of smaller type.

After a brief but most interesting introduction, the chief species in our flora are treated in systematic order, the arrangement and nomenclature followed being that rendered familiar by Bentham's *Handbook*. There is not a great deal in the volume that will be new to diligent students of botanical literature, and especially of the author's own previous botanical works—"*British Wild Flowers considered in relation to Insects*," "*Flowers, Fruits, and Leaves*," "*Seedlings*," and "*Buds and Stipules*"; but even the substance of his remarks at the Cambridge meeting of the British Association in 1904 is given, and these notes have never before been accessible in a systematic arrangement. They refer mainly to seedlings, buds, insect-fertilisation, and seed-dispersal, so that there are many points on which we want more information. The histology of the stem, for instance, in climbers, such as *Clematis* and *Bryonia*, or in aquatic plants, and the root-

tubercles of the *Leguminosæ*, are untouched topics which occur to us ; whilst we should like to have more explanation as to the two forms of pollen mentioned in some species, as to the slightly sensitive stamens of the Common Rock-rose and the turquoise-blue seeds of *Impatiens fulva*. As the author speaks of some of the flowers of the Grass Vetchling as producing seeds without opening, and adds "they are not true cleistogamic flowers," he apparently implies some meaning in the term "cleistogamic" which is neither in its original etymology nor in his own glossary ; and there is no mention of the prevalence of this condition in the

TRIFOLIUM SUBTERRANEUM. OLD FLOWER-HEADS BEGINNING TO BURY THEMSELVES.

FURZE SEEDLING.

(From "Notes on the Life History of British Flowering Plants.")

Sundew. We should also like more bibliographical references, but lest these requests should be mistaken for fault-finding, we hasten to conclude with a quotation showing the intensely interesting character of the work. "On the under side of the leaves (of the Lime), at the base where the nerves diverge, are more or less triangular spaces, enclosed by the under side of the leaf, the walls of the nerves, and a fringe of long hairs. Attention to these was first called by Lundström, who regards them as abodes—'domatia'—for mites. That they are not pathogenic, he proved by growing seedlings and carefully keeping mites away. This was, however, no easy matter, for the mites lay their eggs in the fruit, in which, indeed, there is, he considers, a special cavity prepared for the purpose. In this way the mites develop *pari passu* with the young plant. During the day the mites remain at home in the domatia, but at night, and sometimes during dull

days, they run about all over the leaves, which, however, they do not appear to attack. He suggests—and the theory, though not proved, is probable—that the mites are useful in eating the spores of fungi, which might otherwise grow on and injure the leaves. M. Areschoug thinks he has observed that when the mites are numerous the leaves are specially large and healthy. In certain genera some species have domatia and others not; in the former the leaves are generally smooth, and in the latter protected by hairs. Similar domatia occur on the leaves of many other forest trees, as the Oak, Elm, Sycamore, Alder, Holly, &c."

More Natural History Essays. By Graham Renshaw, M.B. Sherratt and Hughes. Price 6s. net.

We recently had occasion to notice an excellent handbook, by Mr. Beddard, to the Natural History of the animals commonly seen in zoological gardens. But, whilst it is not difficult to turn to detailed accounts of the more common animals, such as the Lion, the Bengal Tiger, the Elephants, the Camels, or the Hippopotamus, one is constantly at a loss for similar information as to species less regularly exhibited. Dr. Renshaw has, therefore, performed a useful task in giving us this volume of twenty scholarly and well-informed essays on such mammals as the Vampire Bat, the Malay Tapir, Steller's extinct Sea-cow, the Chinchilla, the Echidna, and the Spectre Tarsier. As will be seen from these names, he has not, as in his previous volume, taken his types by any means exclusively from the African continent; but his chapters contain abundant proof of first-hand knowledge of the animals either in the field, in the zoological gardens of Europe, or in the museum. Many of the illustrations give us the impression of having been taken with a camera unworthy of the occasion.

Alien Flora of Britain. By S. T. Dunn, B.A. West, Newman and Co. Price 5s. net.

Mr. Dunn has undoubtedly expended great pains upon this work, which he has had to complete under the serious disadvantage of his official residence at Hong Kong, far from British specimens and records. His comprehensive view of the term "alien" will be remembered by those who examined his *Preliminary List*. He does not hesitate to include species which Mr. Clement Reid has found in Neolithic, Inter-glacial and Pre-glacial deposits; but in a work of this kind inclusion is probably more useful than a rigid system of exclusion. The notes on habitats and on extra-British distribution are valuable; but to the ordinary amateur botanist the work would have been of vastly greater utility had it comprised descriptions of the species recorded.

A Glossary of Botanic Terms, with their Derivation and Accent. By B. D. Jackson. Second Edition. Duckworth and Co. Price 7s. 6d.

"Good wine needs no bush," and, did not every English student of botany know the value of each of Mr. Jackson's works for accuracy and thoroughness, the fact that this Glossary has so speedily reached a second edition is proof in itself that it has secured recognition as a standard work. If botanists have inflicted 16,000 terms upon the students of their science, Mr. Jackson is not to blame: but we hardly know whether he need have recognised such wholesale and supererogatory coinage as those of Mr. Clements, the American ecologist. The printing of the work is excellent, though it is to be regretted that the stereotyping of the original has necessitated a supplement.

A Natural History of the British Butterflies, their world-wide Variation and Geographical Distribution: a Text-book for Students and Collectors. By J. W. Tutt, F.E.S. Parts I. and II. Elliott Stock. Price 1s. (net) each.

Mr. Tutt is well-known as an authority on the Lepidoptera, and this work from his pen seems likely to prove one of great value and importance. Strangely enough, however, the two parts we have received contain no suggestion as to the number of parts that are to be issued, nor any indication other than the title on the wrapper of the exact scope of the book. Each part contains some of the general introductory matter and some of the descriptive portion, making 28 and 24 pages in all, respectively, with a plate. The synonymy, description, British and extra-British distribution are given very fully, with mention of food-plants and of times of appearance; and Mr. Tutt apparently lays stress on the egg-laying, or, as he prints it, "egglaying" of the various species.

I Go a-walking. Part III. *By Stream and Lake.* With 20 illustrations by Charles Reid. T. N. Foulis. Price 6d.

As good as its two predecessors, this part contains part of Tennyson's *Brook*, James Montgomery's *Soliloquy of a Water-wagtail*, Burns' *To the Wild-fowl*, Izaak Walton on the Otter, and extracts from Johns on the Pied Wagtail, Kingfisher, Heron, Sedge-warbler, Wild Duck and Teal. The accompanying illustrations, perfect in their kind, include Horses and Cattle in water, Aylesbury and Wild Ducks, Young Teal, Swans and Cygnets, The Vole, The Badger, The Toad, and others.

The Making of East Yorkshire. (*A Chapter in local Geography.*) By Thomas Sheppard. A. Brown and Sons. Price 1s. net.

It is certainly a good notion that teachers should be given a simple elementary exposition of the geological structure and history of their district, illustrated with views, which they can cut out and pin up on the blackboard. Mr. Sheppard is fully competent to provide such a *résumé* of the geology of East Yorkshire. We would, however, venture to suggest for a future edition that geological photographs are generally more useful when accompanied by an outline lettered diagram, and that the succession of beds is taught more impressively with the aid of a general table of formations, and another of local subdivisions with their thicknesses. The Maiden-hair tree, *Gingko biloba*, appears as "Ginko bioloba," and the names of Phillips and Hudleston are also misspelt.

Nelson's Homeland. By James Hooper. Illustrated by Walter Dexter, R.B.A. Homeland Pocket Books. 2s. 6d. net.

It is appropriate enough that the Homeland Association, beginning a new series of topographical works in the centenary year of Nelson's death, should head their list with a guide to Burnham Thorpe, Walsingham, and the rest of North Norfolk from Hunstanton to Cley-next-the-Sea. The work is as well done as the Handbooks have always been; and, though no chapters are especially devoted to the geology, flora and fauna, these receive due notice, a chapter being given to the marrams. By-the-bye, the Society founded by Sir J. E. Smith is the Linnean, not Linnæan. Modern pilgrims will be glad to have the account of the ancient shrine of Walsingham, which has the added charm of one of Mr. Dexter's dainty illustrations. If the artist's "Stiffkey Cockle-women" be reminiscent of Millet, he could hardly follow a better master, and the frontispiece after Beechy, and the youthful portrait of the hero attributed to Gainsborough, are admirably reproduced. There is the usual useful map in a pocket in the buckram cover; but, dainty as is the whole production, it does not seem so phenomenally cheap as the Association's previous publications.

The New State of Matter: an Address by Prof. H. Pellat. Translated by Edmund McClure. S.P.C.K. Price 1s.

We confess to being much disappointed in this little volume in the "Romance of Science" series. It is addressed to the uninitiated, and French men of science are generally distinguished for lucidity. The recent new views of the constitution of matter, form, perhaps, too large a subject for an hour's discourse; but, however that may be, we found that, whilst we proceeded with ease through the first half of the booklet of fifty-five pages, we then floundered deeper and deeper into the abstruse and unexplained, until we felt we might as well be deciphering hieroglyphics. Nor does the subject seem to us to be much elucidated by notes from Professor Sir George Darwin's recent South African address, detached as they necessarily are from their context.

An Essay on Women (An Argument in Rhyme) very respectfully dedicated to all the women who make men better. By Charles A. Witchell. Kegan, Paul, Trench, Trübner & Co. Price 2s. 6d. net.

The author of this volume of highly moral verse has very nearly plagiarised the title of a most flagitious set of verses by the son of an archbishop of Canterbury, for the technical publication of which John Wilkes was expelled from the House of Commons in 1764. There is a dangerous facility about Pope's "heroic" couplets, as is proved by the ease with which Fenton and Broome

caught the trick of their master's style, when he had, as Cowper said, "made poetry a mere mechanic art." Mr. Witchell is better known to readers of NATURE NOTES as an ornithologist than as a poet, and we do not hesitate to say that the best passages in the present little volume are those alluding to bird life.

Nature in Eastern Norfolk. By Arthur H. Patterson. With twelve illustrations in colour by F. Southgate. Methuen and Co. Price 6s.

Gilbert White, though not rich, was comfortably off, and can never have been said to have to work hard for his daily bread: he could, therefore, buy necessary books of reference; and he had received a university education. Arthur Patterson, as he tells us in one of the frankest of autobiographies, was one of the large family of a Yarmouth shoemaker, received his "education" in a local dame's school, and, though decidedly "a rolling stone," has certainly worked hard as a supernumerary postman. Like White, however, he is clearly a born observer of a high order. Tireless in his observation of the birds of his native shores, he has added to his knowledge of their fish by distributing his own paintings of his desiderata among the fishermen. There is too much slaughter of rare birds in the record of his earlier years to please Selbornians; but we read with pleasure of his replacing his gun by a binocular; and, though he is still under fifty, he is able to give in this volume a most excellent account of his time. Not only is his book full of most accurate first-hand observation, but the simple narrative and catalogue are drawn up with the greatest care, and scientific names are added, with references to the works of his predecessors. What with Sir Thomas Browne, Sir James Paget and his brother, Richard Lubbock, Churchill Babington, J. H. Gurney, F. Harmer and Thomas Southwell, Norfolk has certainly had a worthy succession of zoologists; and, were the plants of the county under consideration, perhaps as good a list might be given of its botanists; but we can confidently assert that none of these worthies has done more original work than Mr. Patterson. He confines his observations to the vertebrates, stalk-eyed crustaceans and mollusks, and we are convinced that his list of the latter can be considerably extended. Mr. Southgate's coloured illustrations of shore birds are charming.

Red Fox. By Charles G. D. Roberts. With many illustrations by Charles Livingston Bull. Duckworth and Co. Price 6s. net.

This is the story—a composite but typical story—of a Red Fox in the backwoods of Eastern Canada. Without the pathos of "The Story of the Red Deer," or the inexorable fatalism of Mr. Thompson Seton's books, which in style and get-up it forcibly recalls, the story is full of go, and is obviously true to life. The author's preface is dated from New Brunswick; but Canada is, perhaps, not equal to such beautiful printing, which hails, we see, from Boston. The author's language is sometimes American rather than English, as when he writes that a hound "withdrew from the mix-up" and gripped the fox's throat "just back of the jawbone." Mr. Bull's illustrations, and especially his backgrounds, are too impressionist for our taste; but we have no doubt that many a boy reader this Christmas will be quite oblivious to this characteristic while he devours the story.

New Creations in Plant Life: an authoritative account of the life and work of Luther Burbank. By W. S. Harwood. The Macmillan Company. Price 7s. 6d. net.

When we are told that Luther Burbank is "a great and unique genius," "unique in his knowledge of nature," and "has already accomplished in his chosen line of life more than any other man who has ever lived," we cannot call this "authoritative" account modest; and, when we are told that "he has done more in a generation in creating new and useful types of plant life than Nature, unaided, would ever have accomplished," we cannot help thinking that Mr. Harwood somewhat discredits his hero's own theory of the origin of species. But, however much we may question the taste of its presentation, there is no doubt that Burbank's work has to be reckoned with by the biologist. He has been selecting, hybridising and grafting plants on a large scale for years in "the glorious climate of California," with a success of which the Shasta daisies are, perhaps, the example best known on this side of the Atlantic; and as a result of

his unrivalled experience, he believes confidently in the inheritance of acquired characters, such as effects of environment, and claims to have thoroughly disproved the so-called Mendelian law. Biologists are now recognising, as Mendel recognised, and as we have long urged ourselves, that plants offer the best subjects for experiments in heredity, as for many other physiological problems; and here we have an account of the life-work of a great plant-breeder.

Received: The Decline and Fall of the British Empire (Alden and Co.); *The Nature Study Review* for September; *The Plant World* for October; *The Victorian Naturalist* for November; and *The Naturalist*, *The Irish Naturalist*, *Nature Study*, *The Animals' Friend*, *The Animal World*, *The Humanitarian*, *The Parents' Review*, *The Agricultural Economist*, and *The Estate Magazine* for December.

NATURAL HISTORY NOTES.

313. Rabbits.—With regard to Mr. Daubeny's query, No. 65, as to the shrieking of rabbits, my own experience may be of interest. I live only a mile from the centre of the city, so have not exceptional facilities for Nature study, but keep two rabbits as pets. In catching one, a doe, which I had been exercising in the garden, I happened to seize her by the hind leg, and she instantly commenced shrieking, but ceased directly I shifted my grip to her back. This was about six months ago, but she is still in apparently good health. In a treatise on the management of live stock, written by a Mr. Moubray in the early part of last century, the author alludes to the screams of the rabbit when bleeding to death, but makes no mention whatever of the belief to which your correspondent refers. You will, of course, use your discretion as regards the insertion of these remarks, and, I trust, forgive my troubling you.

L. B. Hewitt.

314. Nesting of Robin.—During last spring and summer I paid particular attention to two nests of the Robin, which were built in my garden. The following notes from my diary I thought might be interesting.

Nest No. 1.—March 10: Robin's nest in summer-house. Built on shelf placed on top of a coil of rope. A large structure, made up of leaves, straw, &c. *Very deep*, open nest. March 21: One egg laid and one on each succeeding day until a clutch of five (March 25) was completed. March 26: Female commenced to sit. April 9: Young hatched, incubation having taken fifteen days. April 18: Young robins left nest this morning, whereupon I removed the nest and placed a nesting-box on the shelf for fear a second *open* nest would be built, which would be easily accessible to prowling cats.

Nest No. 2.—June 1: Robins started building again in summer-house, but *on top* of nesting-box instead of *inside* it! June 4, 9 a.m.: Nest completed and one egg laid! Therefore, nest built in about three days and first egg laid! It is interesting to note that the earlier nest took much longer to construct, (although I do not know the exact time occupied), and that in the case of Nest No. 1 eleven days elapsed after completion before the first egg appeared. To revert to Nest No. 2. A further egg appeared each day up to and including June 8, when the clutch numbered five, and the female commenced to sit. June 12: Took out one robin's egg and inserted an egg of the yellow bunting. June 14: Egg of yellow bunting hatched. It so happened that a partly incubated egg of this latter species was the only one I could procure at the time I required it. The antics of the male and female robins at the advent of this early chick can best be imagined than described! June 20: First robin's egg hatched, thus incubated in about twelve days. Did the warmth from the young yellow bunting result in robin's egg being hatched two or three days previous to time taken to incubate first clutch, and would they have been hatched in twelve days if young yellow bunting had not been there? June 21: Remaining three robin's eggs hatched. June 22: young yellow bunting left nest. July 3: Young robins out of nest, but ensconced at side of same. July 5:

Young robins flying about garden away from nest. As a result of very careful observation, I do not think the male redbreast took any part in incubation, although he was often near the nest, and continually fed the female when she was sitting. When he appeared on the fence with a grub or worm in his beak, he would often whistle as if to let the female know he was on his way to her with food. The great amount of insect food with which the young were fed surprised me, and it was all obtained in the immediate vicinity of my small garden. Worms and earwigs appeared to form the staple diet, but white butterflies and other insects, caterpillars and spiders were also added to the bill of fare. The parent robins became most tame and confiding, and on more than one occasion permitted me to approach and stroke them. The parents continued to feed both broods for some weeks after they had left the nest.

W. Percival Westell.

315. Grasshopper Warbler in Herts.—During last summer there was a marked increase in this most interesting species. At least three pairs nested within a mile or two of my house, and one particular pair I kept under almost daily observation. I first heard and saw the male bird on the evening of May 8, although a friend tells me he heard it in the same spot on May 3. The habitat was a thick hawthorn hedge, which divided pasture-land from a corn-field, but quite close—within twenty or thirty yards—of a pretty well-frequented cart and footpath. One side of the hedgerow, the south side, was much overgrown with thick rank grass, and here the nest was undoubtedly secreted, so much so, alas, that although I spent many, many hours, and endured many a bachache, I could not, and did not, succeed in locating the nest. I observed the birds morning after morning as I laid down in the thick wet grass, risking a premature attack of rheumatics in my anxiety to get a good sight of the birds. At 6 a.m. the male bird was always singing, and kept it up incessantly until I left at 7.30 a.m. Soon after this hour he appeared to cease, and was not heard again until towards evening, then he would start with a vengeance, and keep it up until I used to leave him at near 10 o'clock. I should not wonder if he sang best part of the summer night. I had many opportunities of observing the male bird, much more so than the female. He would invariably perch on the outermost branch of the hedge within a yard or two of me, and did not strike me in the least as the recluse bird I had always considered him to be. As he sang—and the song I can best compare to the loud continuous "purr" of a cat—his beak vibrated at a tremendous rate, and his head moved rapidly from side to side. Sometimes he would sing without opening his beak, and as regards duration of song, I timed him on one occasion for over fifteen minutes without the slightest hesitation or cessation on his part. Then he was only disturbed a second or two and commenced again. I put him to flight once or twice, and he invariably flew only a few yards into the cornfield, and before I was at the bottom of the field leading towards the pathway, was back again singing as cheerily as ever. I obtained much amusement of an evening by listening to the comments of the passers by. The noise made was variously stated to come from "a great big grasshopper," a snake, a bat, and various other wild creatures. There is little doubt that the young were safely got off, and I am looking forward to renewing my acquaintance with this most interesting summer visitor next spring-time.

In the same hedgerow, that is, within twenty yards' range, there were nests of the yellow bunting, greater whitethroat, chaffinch, greenfinch, and robin, and just off the bankside in the corn the nest of the tree-pipit. So that my morning rambles last spring around the haunt of the grasshopper warbler possessed great variety in the bird-life there observed.

5, *Glenferrie Road, St. Albans, Herts,* *December* 8, 1905. W. Percival Westell, M.B.O.U.

316. Thrush Building on Ground.—Every lover of birds can give numerous instances of strange and out-of-the-way nesting places, but it is so rarely that a matter of fact bird like the thrush departs from precedent, that any example becomes worth chronicling. The photograph shown is of a thrush's nest built on the ground in the middle of a marshy paddock. It was placed in an old hoofmark, on a slight rise, within 3 feet of a ditch used for draining, where the first kingcups were in flower. There was no hedge or cover of any description within 25 or 30 yards, and no attempt had been made to utilise the

rank dry grass for purposes of concealment. The blue eggs attracted the eye from quite a distance. The nest itself was strangely unorthodox, only a small portion of it being built in the ordinary way. On the left hand side alone was there the usual outer wall of bents and dry roots cemented on the inside ; the back wall was formed by the deepest part of the hoofmark, apparently untouched ; on the right hand side the bird, so far from trying to conceal itself, had actually pulled down some of the dry coarse grass to the bottom of the nest, but had left it uncemented ; the front was quite open and the ground outside on a level with the bottom of the nest. This is not clearly shown owing to the photograph having been taken from above. The position was so exposed that it was feared the adventurous bird would come to some harm. It was predicted that being so

THRUSH'S NEST ON THE GROUND.

conspicuous it would fall a victim to a sparrowhawk which regularly beats the fields in the neighbourhood. Probably this actually occurred, as our thrush did not sit for long. The nest was found deserted and the eggs scattered, two of them being some inches away from the rest. No apparent reason could be assigned to account for so rash an experiment. In the *Yorkshire Daily Post* of May 27 this year, there was a note from a correspondent concerning a thrush's nest containing five eggs, which he found built in the middle of an open field, but which was so artfully concealed that, returning with a friend a week later, he was unable for some time to rediscover it. Whilst searching around they

flushed a tit-lark from a nest with four eggs in it, which was only 4 or 5 yards from the thrush's nest. In the issue of June 10 of the same paper, a second correspondent referring to this note gave two instances of a similar nature. In the first the thrush had built in a beehive shed on two cross-bars of wood let into each other. The nest was quite unattached, and soon after the eggs were hatched it was found toppled over and the young on the ground 5 feet below. Undaunted, the same birds built a second nest on the staging of a small greenhouse in the same garden, and this time succeeded in rearing their young. In the other case this correspondent cited, a thrush had built its nest on the top of the unfinished wall of a house, during the four days that the workmen were away at Easter. Kearton and other naturalists in their works say that thrushes will nest on the ground, but it is not often that one comes across examples. Strange to say a second instance of a more ordinary character came within the writer's own knowledge this year. This nest was situated in a rhubarb field in the centre of a root. None of these instances, however, are quite parallel to the case shown in our photograph. The lack of any attempt at concealment, and the adaptation of a hoofmark to the nest, which even when completed was of the most rudimentary character, make it unique.

Merton, Surrey. C. R. HADFIELD.

317. Feeding Tits and not Sparrows.—Owing to our good Editor's indulgence in allowing my memos. to appear in NATURE NOTES, I frequently receive letters on many matters. Not long ago a lady wrote to say she had coaxed tits to her window which were a source of daily interest; but that the sparrows had come on to the scene, and were always stealing the tits' food, and driving them away. As this may be a common experience, a few remarks on how to outwit and checkmate the rascally sparrow may be of interest to some of your readers. Advantage should be taken of the different habits and powers of tits and sparrows. Tits are accustomed to seek their food on objects stable or unstable, and it is all the same to them whether they themselves are right side upwards or the reverse when so doing. They may be seen running up and down a tree trunk, or hanging on to a catkin in mid-air, head downwards. Sparrows have not the same clinging powers as tits; they like a firm perch, and are afraid of anything that trembles when they settle on it. Unlike tits, they dislike pecking a piece of food that moves about when worked at; for they cannot grasp it with their feet to keep it still, or cling to it. Bearing these principles in mind it merely requires a little ingenuity to contrive methods of feeding tits, robins, nuthatches, and several other birds, without being preyed upon by sparrows. Across my study window, near the top of the top pane, a few inches from the glass and out of the reach of cats and dogs, is a light bar. On this I hang with string, 3 inches below the bar, sundry bones with fat and meat on them, or lumps of suet, the best of all being the tail from a leg of mutton, which will amuse the tits for several days. A cocoa-nut, with part cut away, and hung up by a string through the eye, is capital. The tits prefer its fruit to anything else; it lasts a long time and is sparrow-proof. Suet or lard run hot into an empty cocoa-nut is turtle soup to tits; robins love it; but sparrows are apt to find it out, and will steal broken bits of bread, and such like, out of a cocoa-nut, whether it swings about or not. Another admirable contrivance is a tray suspended by strings from two posts by the four corners. This should be 2 feet long, 6 inches broad, with sides an inch high, and be made of deal ½ inch thick. On this all sorts of food can be placed, including nuts for nuthatches, while heads of fish or lumps of fat may be secured by a nail to prevent their being dragged off the tray. I have had these trays in use for weeks without being troubled by sparrows. When, however, they begin to venture, I remove the trays at once, and for some time; though a bit of coloured rag on the top of the posts, or some strange object stuck up in the tray, or black threads spread across it, will keep them away for a few days. By some such plans as these, while sparrows are baffled, many interesting and beautiful birds can be attracted and kept under observation, and their numbers and variety are sure to increase as the winter drags along.

Southacre, Swaffham. EDMUND THOS. DAUBENY.
December, 1905.

318. Frogs Attacking Fish.—In NATURE NOTES of December, 1905, p. 229, poor harmless froggy has a serious and startling accusation brought against him. Some mistake must, I think, have been made in identifying the animal seen to sharply attack "a rather languid roach" in Mr. Strong's pond. As to the fish afterwards found dead with red marks underneath their bodies, the frogs certainly had no hand in the matter. Our common frog, *Rana temporaria*, has neither the inclination nor the ability to cause any harm to fish. Even if he were murderously inclined, his extremely minute teeth and comparatively weak jaws would be powerless to effect any injury upon them. It seems not improbable that the "red marks" may have been bruises received during the process of capture, or again that the assailant may have been the larva of *Dytiscus marginalis* or some other water beetle. One of these formidable and voracious creatures may sometimes be seen hanging on the abdomen of a *small* fish and literally eating up its victim alive. The size of the fish is not mentioned in your correspondent's note. G. T. ROPE.

Blaxhall, Suffolk.

319. Instances of frogs "attacking" objects in the water, such as dead rats, dead or dying fish, &c., are not uncommonly noticed. But do they really "attack," and if they did have their jaws the power of doing injury? It seems impossible for a frog to have caused the "red marks on the belly of roach as if bitten," spoken of in p. 229 of our December issue. The solution may be this. Frogs like to sit on an object floating in the water, and will make frantic efforts in attempting to mount anything that moves and turns over with their weight. These struggles may be mistaken for attacks.

December, 1905. EDMUND THOS. DAUBENY.

320. British Lepidoptera. The late Mr. William Buckler's collection of British Lepidoptera. In the November number of NATURE NOTES (p. 216) Mr. Daubeny says that he believes this collection is in the possession of the Ray Society. Will you permit me to state that it was presented to the Natural History Museum, South Kensington, by Mr. Robert Newbery, and is now on view in the Public Insect Gallery.

November 21. W. F. KIRBY.

321. Roman Snails.—With regard to the supposed modern introduction of *Helix aspersa* and *Helix pomatia* into England there can be no doubt that this belief is founded on an error. *Helix aspersa* is now known to occur in a number of pre-Roman beds. It occurred in the kitchen-midden at Hastings, and in a deposit at St. Catherine's Down, Isle of Wight, both of which are Neolithic, whilst it is also known from Greenhithe (Bronze age), Walthamstow, Newbury and Harlyn Bay, all of which are pre-Roman, whilst it is known from a cave-deposit in Ireland, where it was contemporary with a Pleistocene fauna. *Helix pomatia* is known from a deposit at Reigate, which is probably Neolithic. From these facts it is obvious that these two species are really indigenous to these islands, though there can be no doubt that the range of *H. aspersa* has been extended by human agency.

Benenden, Mackenzie Road, Beckenham. A. S. KENNARD.

322. Argonaut and Nautilus.— Both belong to the Order *Mollusca* and Class *Cephalopoda*, and are akin to the cuttlefish or octopuses in progressing through the water by ejecting water through a syphon. The Nautilus, *Nautilus pompilius*, the Pearl or Chambered Nautilus, belongs to the Sub-order *Tetrabranchiata*, or has four gills, while the Argonaut, the Paper Nautilus, *Argonauta argo* has only two, and belongs to the Sub-order *Dibranchiata*. It was formerly thought that the Argonaut used its arms as oars or sails, whereas it only uses them to cover its shell and repair damage to its secretion of new material. The poets (notably James Montgomery), wrote of the Argonaut as if it rowed itself along "with a tier of oars on either side," but Dr. A. Wilson (*Illustrated London News*, December 2, 1905), says the animal would sink if it raised its arms, as they attach the shell to the body. Dr. O. W. Holmes, in his poem on the Chambered Nautilus, is evidently aware that that mollusc cannot sail or row itself, but it was not the Nautilus, *N. pompilius*, as he suggests, which the poets wrote about, but *Argonauta argo*. Dr. A. Wilson calls the latter a "groundling,"

for although it could not row or sail itself, neither does it progress itself along the *surface* of the sea. The Nautilus is a deep-sea species, and has a hard shell, but the shell of the Argonaut is almost as thin as paper, and would be crushed by the weight of the superincumbent water if it were a "groundling"?

December 12, 1905. N. D.

[Dr. S. P. Woodward writes (*Manual of the Mollusca*, p. 163: "Four species of argonaut are known; they inhabit the open sea throughout the warmer parts of the world. Captain King took several from the stomach of a dolphin caught upwards of 600 leagues from land."—ED. *N. N.*]

323. Sundew Flowers Open.—During a visit to the West Riding of Yorkshire last summer, I went with a brother to a locality where *Wahlenbergia hederacea* was reported to grow. We found it in quantities, and in the neighbourhood there were many other interesting plants, including the cranberry, butterwort, bog asphodel and round-leaved sundew. I am sending you this note to record the fact that we found many *fully open* flowers of the latter plant. The date was July 21.

Millard's Hill, Frome. G. B. MILNE-REDHEAD.

NATURAL HISTORY QUERIES.

67. The use of Snake Poison.—Are the poison fangs of serpents for defensive purposes or for procuring food? Generally speaking the death struggle between an animal and its natural prey is so one-sided as to involve little or no danger to the assailant. Unless driven by extreme hunger predaceous animals do not attack those creatures that can retaliate and cause serious injury or death. A cat kills a bird or a mouse without danger to itself, and so does a hawk. An otter does not risk its life in catching a fish, or a stoat in killing a rabbit. And those animals that prey on poisonous snakes are rarely, if ever, killed by them. Most deadly serpents are sluggish in their habits; they do not pursue and run down their prey, but lie quietly in wait until some unsuspecting animal comes within striking distance, when they inflict a wound that effectually prevents escape. It is probable, therefore, that snake poison is a means of providing food rather than a protection against ordinary enemies, and that its defensive power is an insignificant factor in determining the existence of the race of deadly serpents. Perhaps some readers of NATURE NOTES may feel inclined to enlarge on this matter.

Southacre, Swaffham, EDMUND THOS. DAUBENY.
December, 1905.

68. Telescope.—I should feel obliged if you or any of your readers can tell me of a really good telescope, with small stand, to place on my window-sill, it being sufficiently powerful from which to study birds and other objects on a lake which is from half to three-quarters of a mile away, where to be obtained and price.

Brownslow, Great Budworth, Northwich. LILLY HARGRAVE.
November, 3, 1905.

SELBORNIANA.

THE SAVING OF HINDHEAD.—We were, we are sorry to say, under a misapprehension when writing on this subject in last month's NATURE NOTES. We are informed by Sir Robert Hunter, the Chairman of the Committee of Guarantors, that barely half of the £4,000 required has as yet been subscribed. As the public cannot wish the courageous ladies and gentlemen, who, by guaranteeing the purchase-money, secured this invaluable property for the nation in perpetuity, to be mulcted for more than they are ready and willing to subscribe, we hope there will be a liberal response to the appeal now being issued for the

remaining £2,000. The money of the public spirited could hardly be better spent. We are pleased to hear that the land is to be vested in the National Trust, while the management is to be in the hands of a local committee. Contributions may be sent either to Mr. Lawrence W. Chubb, of the Commons and Footpaths Preservation Society, 25, Victoria Street, S.W., or to Mr. H. R. Owtram, Haslemere.

Gowbarrow Secured.—As we go to press we hear with much satisfaction that the £12,000 necessary to exercise the option of purchasing this valuable property for the National Trust has now been secured.

Midland Re-Afforesting Association.—This thoroughly practical and business-like body, which is under the presidency of Sir Oliver Lodge, has also been compelled to issue an appeal for additional subscriptions and donations, primarily to secure the services of an organising secretary. Accompanying the appeal is a reprint of an illustrated article in *Pearson's Magazine*, by Mr. Marcus Woodward, entitled "Britain's Black Blot," which shows that an excellent beginning has been made in planting the refuse heaps of our mining districts with trees. Apart from its scenic and hygienic recommendations, this undertaking should ultimately be not only self-supporting but even profitable. Meanwhile, however, the initial efforts and missionary enterprise necessary, tax overmuch the time and the purses of the honorary officers. Contributions to the fund required—not a large one—should be sent to the Honorary Secretary, Mr. P. E. Martineau, Bentley Heath, Knowle, Warwickshire, before the Annual Meeting, a month hence.

Wild Bird Protection Orders.—We have received from the Home Office an order dated August 22, repealing that of March, 1900, with reference to Carnarvonshire. It extends the close time from the last day of February to October 1, adds various birds, including the Yellow-Hammer, Peregrine, Linnet, Raven, Robin, Starling, Thrush, Wheatear and Wrens, to the schedule, protects the Goldfinch and the Kingfisher throughout the year, and prohibits the taking of their eggs, or, after April 30 in each year, those of the Lapwing.

We have also received an Order dated November 2, repealing that of July 8 with reference to Devonshire. It extends the close time from January 31 to September 1, adds various Hawks, the Osprey, the Nuthatch and other species to the schedule, protects the Buzzards, Chough, Goldfinch, Guillemot, Gulls, Hawfinch, Kingfisher, Owls, Woodpecker and Wrens throughout the year, prohibits the taking of the eggs of most of these, and of other species throughout the county, or of any eggs on Lundy Island or in the Baggy Point, Clovelly, Lynton and Slapton and Start districts; but deprives the Shag and the Cormorant from protection in the districts of the Axe, Exe, Dart and Teign fisheries.

We have also received an Order dated November 6, repealing that of April, 1901, with reference to Norfolk. This adds the Crossbill, Sand Martin and Bearded Titmouse to the schedule, extends close time from March 1 to September 1, except for Snipe, Teal and Wild Duck, protects the Bitterns and the Great Bustard throughout the year, prohibits the taking of the eggs of many species, including Wild Duck, Owls, Terns and Kingfisher, throughout the county, or of any eggs on the foreshore or most of the Broads, where also the birds are themselves protected on Sundays.

We have, lastly, an Order dated November 9, repealing that of November, 1902, with reference to Gloucestershire, extending the close time from March 1 to November 1, depriving the House Sparrow and Woodpigeon of protection, protecting all birds on Sundays in certain districts, and certain species, including Lapwing, Nightjar, Goldfinch and Kingfisher, all the year round, and prohibiting the taking of the eggs of Owls, Woodpeckers, Goldfinch, Heron, Hobby, Kestrel, Merlin, Kingfisher, Lapwing and other species.

Cheap Natural History Lantern Slides.—We have received from Messrs. Butcher and Sons, of Farringdon Avenue, a specimen of their "Junior Lecturers' Series" of lantern slides. These are well coloured and are issued at the very moderate price of two shillings per set of eight, with an accompanying printed reading. They comprise forty-eight mammals, twenty-four birds, twenty-four lepidoptera, and twenty-four slides of fish and other marine animals.

Something to Swallow.—Under this heading some humourist has been anticipating our number for November next, for this paragraph has been going the round of the newspapers:—

"A possible excerpt from Nature Notes for November, 1906: 'The swallows which were overtaken and benumbed by wintry weather at Lucerne last autumn, and were sent forward to sunny Italy by express train, this year did not attempt to fly across the Alps, but presented themselves in large numbers at the booking-offices on the Swiss side of the tunnel.'"

SELBORNE SOCIETY NOTICES.

[Note.—All Announcements with regard to Future Meetings of the Central Society or Branches will be found together at the end of these Notices.]

Objects of the Society.—To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) the skins and plumage of such birds as are not domesticated. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

Subscriptions.—The Council has great pleasure in acknowledging subscriptions of greater value than 5s. from the following members: Miss H. Taylor, 10s.; the Hon. C. Graham Murray, 7s. 6d.

New Members.—*Central Society.*—The following stand for election: Miss Innes, Miss Honora Taylor.

Hampstead Branch.—Miss Dorothy Wilson.

Abinger and Shere Branch—The Lady Farrer, The Hon. Fanny Farrer.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings when the Publications Committtee meet (at present on the second Monday in the month), for the purpose of issuing books to Members.

The Hon. Librarian has pleasure in announcing the following additions to the Library, all kindly presented by the Editor: "Beasties Courageous," by Douglas English. "Nature in Eastern Norfolk," by A. H. Paterson. "Nature through Microscope and Camera," by Richard Kerr. "New Creations in Plant Life," by W. S. Harwood. "Travels of a Naturalist in Northern Europe," two vols., by J. A. Harvie-Brown. "Uses of British Plants," by Rev. Prof. G. Henslow. "Wild Wings," by H. K. Job.

NEWS FROM THE BRANCHES.

Abinger and Shere.—On Thursday evening, November 30, Miss Edith Pitcairn gave a lecture on "The Daily Life of English Wild Birds" in Abinger Hammer Schoolroom. The lecture was illustrated by excellent lantern slides, and the interesting anecdotes and instructive facts told by Miss Pitcairn were much applauded by the audience. At the Peaslake Schoolroom, on the evening of December 1, Miss Edith Pitcairn chatted pleasantly about "Birds and their Ways," including some especially interesting notes on the Albatross and the Penguin, their settlements and nurseries.

WINTER MEETINGS OF THE SOCIETY.

Saturday afternoon, November 25.—About seventy members of the Selborne Society assembled at 33, Queen Street, where Mr. Mühlberg kindly gave a demonstration on *Zoology in Everyday Life*. After reviewing the different branches of this great science, Biology, Morphography, Bionomics, Zoo-Dynamics, Zoo-Physics, Zoo-Chemistry, Plasmology, and Philosophical Zoology, the lecturer dwelt on the one he had made his life study, that of fur-bearing animals and the use of their skins to us in every-day life. He rejoiced in the fact that during the last sixty to seventy years, principally owing to the introduction of steam and railways and consequent facilities for travelling, all the myths about the various extraordinary animals, monsters, sea-serpents and the like, supposed to exist oversea, have given way to the more accurate and definite knowledge of to-day. Lately, only very few large animals, not known to man before, have been discovered; one instance of these few was the Okapi, discovered two years ago. As to the uses made of the pelts of fur-bearing animals, they are more extensive than is generally known. Not only are fur skins made up into garments, hats, gloves, shoes and rugs, &c., but they are also used for artist's and ordinary brushes, and in many cases the fur is cut off for making felt. Again they are used for medicinal purposes, as, for example, the skin of the wild cat, which is largely sold as a cure for rheumatism in France. Many toys are made of them, anglers' flies, and for oil refining the brush of the fox is used as a purifier. An extensive range of nearly all the skins of the fur-bearing animals was systematically shown and explained by the lecturer, who kept the audience interested for nearly two hours. There were specimens of the valuable Silver and Black Fox, of which the finest skins fetch £600 and more each; of the Russian Sable, which have realised in public sale up to £60; of the Hudson's Bay Stone and Pine Martens; of the Wolverine, Ermine, Wolf, Skunk, and Civet Cat, the latter being of a colour similar to the Skunk—jet black and pure white—but the stripes in the shape of a lyre. Of the Chinchilla, both real ones from Peru and the Bastard Chinchilla from La Plata. Also of the Bear, and its kinsman the Raccoon, called by the Germans Wash-bear, because it dips into water each morsel of its food whenever possible, and

of the Australian animals, Opossums, Wombats, Wallabies, extraordinary, as are almost all Australian animals, either for their shape or their fur or their pouch.

Last, but not least, the Nutria. This most curious animal, which belongs to the great family of the *Octodontidæ*, and comes from South America, appears to be the only one known to have its teats on the sides of its back, a phenomenon explained by the fact that it lives in swamps, and has often to carry its young on its back for long swims. Next were shown all the different imitations of the above skins which are manufactured from less expensive skins, chief among which are the Silver and Black Fox imitations, being Red Fox dyed to these shades; the Sable, imitated by the Russian Kolinski dyed to match; the Ermine, for which the common domestic White Rabbit is employed; the Chinchilla, imitated in Rabbit and Hare skins, and the Seal, for which the most common substitutes are Rabbit and Musquash skins sheared and dyed to the right shade. These imitations are in some cases so skilfully produced as to be almost identical with the real fur in appearance. The remainder of the time was devoted to answering questions of the Members, which was gladly and explicitly done, and to a visit to the rest of the extensive warehouse. A vote of thanks, proposed by the Secretary, Mr. Mark Webb, and seconded by Mr. H. H. Poole, terminated the proceedings.

FORTHCOMING EVENTS.

COUNCIL AND COMMITTEE MEETINGS.

Monday, January 8.—Publication Committee, at 5.30 p.m.
Tuesday, January 23.—Council Meeting, at 5.30 p.m.

WINTER MEETINGS OF THE SOCIETY.

Saturday, January 13.—Natural History Museum, Cromwell Road, S.W. Meet in the Central Hall at 2.15 for 2.30. Professor Boulger will give a demonstration.

Saturday, January 20.—Visit to Fishmongers' Hall, London Bridge, E.C. Assemble at 3 p.m. Guide, J. Wrench Towse, Esq., Clerk to the Fishmongers' Company.

H. H. POOLE,
Hon. Sec. Excursions Committee.

ANSWERS TO CORRESPONDENTS.

B. C. M.—The two principal species of Eider Duck, *Somateria mollissima* and *S. spectabilis*, breed socially in Arctic and sub-Arctic regions and are there domesticated, chiefly in Iceland and Norway. The female bird plucks the down from her breast and lays her eggs upon it. The first two clutches and their down are taken; but the third, to which the male bird contributes some down, is left, lest the birds should desert the nest. Each nest yields about a quarter of a pound of clean down per annum, that thus taken from the nest being known as "live down." No cruelty whatever is practised.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 194. FEBRUARY, 1906. Vol. XVII.

A WINTER POND.

EVERY winter we keep a miniature pond in our study, and, as the materials are gathered from different districts year by year, these miniature ponds have never failed to interest and also to rouse in us wonder and admiration at the secrets they have disclosed.

Last year, in the late autumn, we gathered a small quantity of jelly, which lay stranded just above the fringe of the water on the sandy banks of a shallow pool. For want of something better, we used a stiff envelope to lift up a little of the underlying sand and the jelly intact, and, on reaching home, placed this in some fresh water together with a little well-washed Anacharis and duckweed taken from the same pond. This was the second week in October, and early in November we noticed that the water was swarming with microscopic creatures, which proved to be the larvæ of the caddis fly. Minute as the creatures then were, they had ensconced themselves in dainty castles of beautiful and delicate mosaic work, made by cementing tiny grains of sand edge to edge. The little caddises had bright mahogany-coloured heads with enormous eyes, and their six legs, which, during locomotion, they protruded from the mouth of their castle, were covered with hooked bristles.

Day by day we watched as they scrambled over the waterweed and fed on it, after the manner of ordinary caterpillars In the early stages, when not feeding, they amused themselves by clambering up the glass walls of the aquarium and tumbling down again.

By January 12 their castles were about an eighth of an inch in length, and on that date we pounded up a small portion of nacre from a pearl-oyster shell and put it into the aquarium with the sand. The next day nearly every caddis case had a narrow rim of mother-of-pearl arranged round the wide end, and the addition gave a perfectly artistic touch to the whole.

After this the sand was forsaken for building purposes, except in four solitary cases. Of these one caddis was particularly conservative and kept to the sand; two built the under part of sand, and that part which covered the back of mother-of-pearl; and another ignored both sand and pearl, and, using bits of waterweed, appeared as a veritable "Jack in the Green."

At first the cases were so transparent that the waving motion of the body within could be quite clearly discerned. Later the movement was more obscured, and at last entirely hidden, perhaps by the thickness of the gluten and silk with which each case was lined.

In the early morning the sand at the bottom of the aquarium was etched with a maze of lines caused by the caddises walking round and round and dragging their castles after them. Up to mid-day they seemed to do nothing but perambulate the sand in a ridiculously serious manner, except occasionally one would halt, forage in the sand for a second or two, and then pass on.

Assiduously as we watched the little creatures, we were never once fortunate enough to see them in the act of cementing fresh bricks to their castles. This was evidently the work of the night, for in the morning we were often able to detect where new material had been added to several of the cases.

Of all the myriads which swarmed in the water in the early stages, only about two dozen arrived at maturity; but this was an advantage, in that it enabled us to single out individuals and upon them concentrate our observations.

Their feeding-time they altered once or twice during their short existence, but it was generally about mid-day that, as though with one consent, they scrambled up among the weed and began to feed. They had splendid appetites, and constantly required fresh supplies of food. Of watercress they were particularly fond. Some would get to the edge of the leaf and gnaw from left to right, others from right to left, and others, again, would strip the leaf of its fleshy surface and leave behind patches of thin transparent tissue.

The shape of the castles was that of the elephant-tooth shell. The wide end, from which the head protruded, was not a complete circle, as one sees represented in books (although this was the form after the perfect insect had emerged), but was hooded over at the back to protect the head when feeding, and hollowed out in the front to allow room for the play of the neck.

On January 28 we thought we would tempt them with a brighter building-material, and added some crushed glass of a brilliant green. Several times we saw them foraging amongst this new material, but not one single fragment did they utilise.

At times one or other would hang up his castle on a piece of weed and retire into its depths for a prolonged fast of two days, after which he would reappear and feed more voraciously than ever.

The head was noticeably paler in colour after the fast, and

we concluded that a change of garments and headgear had taken place during the retirement.

As the larvæ ignored the green hydras, bell-animalcules, rotifers, and others, which were their constant companions, we concluded that they were strictly vegetarians; but after adding some ants' eggs and noticing the particular attention these received and how soon they were demolished, we changed our opinion.

On February 4 two caddises attached themselves to the sides of the aquarium to pupate, and two others, for the same purpose, buried themselves in the sand. The large end of their castles they closed by fitting the arched part, which formed a hood, into the hollow under the neck, just like shutting a perfectly-fitting door. The small end showed no alteration.

The last castle door closed on May 15, but some time previously, on March 3, the first caddis fly had emerged, sat for its portrait, and died on the window-pane a few hours later. The others, as they appeared, we set free into the garden.

It was not until the middle of June that the last one emerged, and then, with no little regret, we gathered together the forsaken mother-of-pearl castles, and noticed that, like our own houses, they began to deteriorate as soon as tenantless.

The perfect insects we did not find nearly so interesting as the æsthetic little architects from which they had emanated.

S. D. W.

HOW TO GATHER WILD FLOWERS.

By the Editor.

I WILL not merely paraphrase Mr. Punch's advice to those about to marry, and say to those about to gather wild flowers, "Don't." I see no reason why we should not gather some flowers; but I must preface what I have to say by pointing out cases where we should not. If we see but one specimen of any kind, let us leave it; and, if only a few, let us in no case gather them all. We must remember also that an annual is entirely dependent upon the seed it may be allowed to form and ripen for its continuance into another season. For this reason we would specially appeal to our readers to spare the beautiful blossoms of the Perfoliate Yellow-wort (*Blackstonia perfoliata*).

It is practically useless to gather some plants unless we carry a portable press with us. The corollas of the Flaxes, for instance, generally drop off as the plant is picked, and those of the species of Convolvulus close up not to re-open. Many wild flowers last but a very little time in water, especially in the

dry hot air of a sitting-room; and others are far less effective when placed in a vase, or when seen by artificial light. Wild hyacinths, for instance, suffer a sad change of hue in the latter case. It ought to be unnecessary to suggest that no one should pick flowers if they do not intend to take them home, but merely to litter the road-side with their withering remains.

Such perennials as cowslips, daisies, or buttercups, primroses, marsh-marigolds, and violets, are not likely to suffer from our gathering bunches of their blossoms, if we are careful not to root up the plants. We may make our daisy-chains or cowslip-balls with impunity; and, though the buttercups will probably flag, they will revive gloriously in a bowl of water.

In case plants may be but loosely rooted in the soil, it is better to cut them than to pick them, and it is a good plan to carry a small pair of scissors for this purpose and a *sharp* knife for any spray we may want to take from a woody plant. If we want to gather water plants, an iron hook, with part of its inner edge sharpened, affixed to walking stick or umbrella, will prove useful.

The student may be reminded that now-a-days much of what is most interesting about a plant may—nay must—be observed before it is gathered. We require, for instance, to notice the soil and aspect in which it is growing, its relative abundance as compared with its associated species, its insect and bird visitors, and the working of any contrivances it may exhibit for pollination or seed-dispersal. Even if we are collecting for a local or school museum, or for the less defensible private herbarium, it is only in a few cases—and then only with one specimen of a species—that it is necessary to uproot the plant. It is desirable to examine the tubercles of the Lesser Celandine, the bulb of *Ranunculus bulbosus*, the nodulose root of *Spiræa Filipendula*, and the differing characters of the species of *Œnanthe*. In the interests of our own future studies and of those of others we should be very chary of sacrificing the bulbs of a *Gagea* or the tubercles of an *Ophrys*. On the other hand, if our specimen is to be of any scientific value it is desirable to have a root-leaf as well as those on the stem, a bud, if possible, as well as a flower, and in very many cases a ripe fruit also. It may often be necessary to label the specimens as we gather them, for which purpose a stock of gummed labels should be carried.

It has been observed that flowers wither more rapidly in the hands of some people than in those of others; and probably they would be less likely to fade when held in gloved hands than when the hands are bare. The scientific student, however, will probably carry either a japanned vasculum or a portable press. As to the former, I can only remark that it may be packed very full, but should not be allowed to get heated by the sun, unless a few drops of water be inside it to vaporise. A light and effective press may be made of two double thicknesses of millboard covered by a book-binder on both sides with American

cloth, and secured by an ordinary pair of straps with a handle. A dozen sheets or so of botanical drying paper or ordinary blotting paper are carried in such a field press.

ON THE SUSSEX DOWNS.

A FIELD Naturalist has many longings, and in that respect, perhaps, resembles most members of the Genus *Homo*. The writer had long numbered amongst his desires the opportunity of visiting the far-famed chalk hills of Sussex, better known as the Downs, and particularly the South Downs in the neighbourhood of Beachy Head. Recently his wish became a reality, and this unpretentious essay recounting some of his experiences may perchance afford interesting reading.

To a resident of Hertfordshire, one of the chief features which attracts one when rambling over these mighty Downlands is the absence of trees, woods and copses. Moreover, one misses, too, the quiet, leafy lanes and shady nooks, sylvan scenes enjoyed at home. True, in some of the valleys one stumbles unexpectedly upon a sequestered village or hamlet in the near vicinity of which there are a few leafy lanes which remind the rambler strikingly of Hertfordshire, but for the most part these leafy spots are few and far between. For all that, the landscape and seascape views are indeed beautiful to behold. Hill and valley succeed hill and valley, the Downs seem to roll on one after another until they reach and seem to tumble into the sea when one gazes seawards, or, turning to right about, until they reach the Weald of Sussex, where we may catch more glimpses of the scenes we know so well in Hertfordshire than are to be observed when in the very heart of Downland.

When the heat of the Weald and in the lanes bordering the Downs is stifling and oppressive, then is the time for the rambler to mount one of the Sussex headlands and inhale the pure, invigorating air. True, some of these hill climbs are somewhat fatiguing and the springy turf is as slippery as ice where the slope is extra steep, but the view when the summit is reached, and the bracing air, amply repay the climb.

What strikes the thoughtful rambler over these South Downs, too, is, how and when were these vast mountains of chalk constructed? The former question may be answered somewhat briefly and intelligently, the second question is a mere matter of conjecture and will probably ever remain a mystery. Is the reader aware that these chalk hills were formed many, many decades ago by countless millions of small shell-fish, tiny atoms which require the powerful agency of the microscope to reveal in all their wonder and beauty? Yet is it not wonderful to reflect that these atoms of shell life when they have fallen to

the bed of the ocean throughout a countless number of years have accumulated to so vast an extent as to become in reality the floor of the ocean? Eventually, at some remote period in the world's history, the turbulent and restless sea has thrown up its chalky bed and so formed these Sussex Downlands, on one of the highest points of which we are now seated trying to write down some of the impressions which come to mind. One craves for information as to these Downs, and although we are able in a measure to satisfy our cravings, there still remains a wealth of information which is hidden amongst the secrets of the past. We know, for instance, that these Downs were numbered amongst the strongholds of the Ancient Britons, forefathers of ours of long, long ago. These old warriors have left behind them many evidences of their entrenchments, battle-grounds and tombs. The barrows are the burying places of these old relatives of ours, and excavations have revealed urns containing the remains of some of our chivalrous forefathers. One is able to see, too, up on these Sussex Downs, the remains of a Danish encampment, and oftentimes many prehistoric implements have been unearthed. Although we can glean this information, it is a mere cycle of time that we can comprehend, a mere spoke in the wheel, and we are still left hopelessly wondering what is the real genesis of the Downs, and we have a longing to become acquainted with every epoch in their history and to have their interesting and wonderful story related to us page by page and their cloak of wonder unfolded to us fold after fold.

What the writer really set himself out to write was a passing glimpse of the natural history of Downland so far as it could be observed during a few brief visits. Suppose, then, we start from that mighty headland, Beachy Head, on which the beacon fire burned so brightly at the approach of the Spanish Armada, and ramble over hill and dale, observing the wild life as we go. We are in Flora's realm, although the August sun is high in the heavens and rain for some weeks has been conspicuous by its absence. The herbage is dry and parched in many places, but in spite of this our list of wild plants totalled over 200 species, but it is the old story of eyes and no eyes right through. Not that the writer possesses any particular qualifications in this respect. Similar observation may be achieved by the merest tyro in botany, if only the spirit and the sense of observation are quickened and intensified at every opportunity.

In a brief essay such as this, what shall I write of the 200 odd species of Downland plants? The author of "Nature in Downland"—Mr. W. H. Hudson—even in a sumptuous and bulky volume found it impossible to do justice to the wild life of the Downs, how then can we, in this unpretentious survey, hope to give a true and faithful account of all there is to be seen and heard around these health-giving heights? Perhaps if one were to single out the *chief* inhabitants of the plant world of Downland—that is during late summer—the list would be restricted to about a dozen species.

First, then, the light yellowish clusters of Dropwort flowers cannot fail to attract attention, neither can the delicious pink umbelliferous heads of the Burnet Saxifrage. Of the yellow or golden flowers, the Ragwort is king of all, towering monarch of all he surveys. Little companies of these fine stalwart plants may be lighted upon very frequently on the Downs, for they seem to hate solitude, are of a colonising nature, and grow luxuriantly in the poorest soil.

The pale lilac of the Scabious carpets almost the whole of Downland, and adds pleasing variety to the panoramas presented to the seeing eye. These Scabious plants seem very stunted in growth, indeed, much of the Downland flora strikes one this way. Plants which at home attain a height of several feet and grow in much luxuriance, are here found but a few inches. Doubtless the explanation is that the positions—except on the sheltered hillsides and in the valleys—are exposed, the depth of soil is somewhat shallow, and the plants have dwarfed themselves to survive the ravages of the nibbling sheep. Wherever there is chalk, there you may search with a certainty of finding the Gentian, the Salad Burnet, and the Common Rock Rose, the first purple, the second red, and the third sulphur-yellow. Other yellow flowers which are very plentiful are the Meadow and Kidney Vetches, the Bird's-foot Trefoil, and the Long-rooted Cat's Ear.

Those unacquainted with our British flora would, on seeing the beautiful Clustered Bell-flower for the first time, doubtless consider it a garden escape, and in popular language a Canterbury Bell. It is pleasing, indeed, to make the acquaintance of this plant up on these South Downs; but the specimens here observed were stunted in growth, and whereas these attained a height of a few inches only, we observed specimens of the same plant growing in the valleys which were at least two or three feet in height, bearing at the summit a fine clustered head of flowers. A similar plant in form and colouration is the Harebell, with its frail head bowing respectfully to the breeze, whilst of the carpet of purple Heather and Thyme it is difficult to write in too glowing a manner. The scent from the Thyme is as of a well-selected herb garden, but here we inhale the sweet aroma from plants growing in their own wild fastness, untended by man. Here, too, we made acquaintance with several species of Thistles, mostly purple in colouration and exceedingly prickly by nature. One species, however, cannot fail to attract notice when its array of flowers is well spread out to the light of day —the Carline Thistle. This species, unlike most of its fellows, is yellowish in colour, and reminds one very strikingly of some forms of everlasting flowers.

In the season of the year the glories of the Golden Furze must surely afford untold delight to the Downland wanderer, and as we passed the bushes on those August days the seed-pods exploded violently on several occasions as of a pistol shot, scat-

tering the seed some considerable distance. A minute plant grows over most of the Downs, too, which unless looked for would probably escape notice. It is bedstraw-like in appearance, very dwarf, and bears the somewhat curious English name of Squinancy-wort.

The Greater and Lesser Knapweeds are very common, the Greater species especially; and the little Eyebright, the beautiful blue of the Borage, the Bugloss and the Round-headed Rampion, the white of the Yarrow, the scentless Mayweed, and the Greater Bindweed, and the yellow of the Horned Poppy and the Toadflax, are salient floral features.

In the valleys, where there are rivers and streamlets—the Cuckmere Valley, for instance—the flora, of course, varies greatly from that of the Downs. A fine patch of light pink on the banks of the Cuckmere revealed the Common Marsh Mallow in all its beauty, and the long inflorescence of the Purple Loosestrife, the flaring gold of the Yellow Loosestrife and the pinkish clusters of Hemp Agrimony, added variety—which is so charming—to the sylvan scene.

Another yellow flower which is especially partial to these Downs and deserves notice is the Yellow-wort, whose leaves are united at the base and form a cuplet in which water is sometimes collected, as in the better-known Teasel of our Hertfordshire lanes. Then there is the Marjoram, which vies in the luxury of its dress and the sweet aroma it gives forth with the purple Thyme, and the array of pink flowers of the Greater Willow Herb strikes the eye cheerfully and pleasantly as of a row of soldiers guarding the streamlet as it dances merrily on towards the ocean beyond.

Thus we must dismiss our notes upon the Downland flora in these few brief lines, save remarking that we had the satisfaction of adding to our list one plant, the Alpine Woundwort, which has hitherto only been recorded in one county of England, *i.e.*, Gloucestershire.

We hardly know to which of the two features to devote our remaining space, whether to the Butterfly or Bird-life of the Downs. Perhaps a brief review of both will overcome the difficulty.

Butterflies! Ramble over these South Downs in the summer-time if you would see Chalk Hill, Common and Adonis Blues in all their sweetness. Have you ever seen the Painted Lady Butterfly in her finest dress? If you have not, go on the Sussex Downs and you will observe as many Painted Ladies as you desire to see. Red Admirals, Meadow Browns, Whites, Graylings, Fritillaries, Clouded Yellows, all are here, visiting the flowers which garland the herbage so pleasingly, dancing hither and thither amongst the garden of wild flowers, settling ever and anon to sip the nectar or secrete their eggs upon some particular plant, which the larva, when hatched, will find much to its liking.

Stand still for a moment or two and cast your eyes around.

You are fully awake upon these Downs, it is no place for the sleepy-eyed or the sluggard. Count the butterfly-life resting amongst the herbage, note the colouration—blue, yellow, red, brown, white. Walk along quietly afterwards and observe the coquettish creatures as they fly up at your approach, only to settle again a few paces away.

The Bird-life! Yes, seawards you may see various Gulls winging their way over the surface of the water. Over Beachy Head the clamour of sea-birds reaches the ear, but unless you seek an early grave, do not wander too close to this rugged headland, even though you chance to be a most enthusiastic Field Naturalist determined to accurately record all you see and hear.

Bird-life in August is not conspicuous, but one cannot fail to notice on the Downs the number of Meadow Pipits, Greenfinches, Yellow Buntings, Linnets (with such rosy-red breasts), Skylarks, Rooks, and Jackdaws, Common Buntings uttering their wheezy little songs, Stonechats busy feeding their interesting chicks, Wheatears running along the springy turf before returning to their winter home, a Kestrel hovering aloft, and in the marshes along the valleys dapper little Ringed Plovers, Moorhens, Coots, Pied Wagtails, Redshanks, Sandpipers, and wild fowl.

Snakes are plentiful on the Downs—we saw several Grass Snakes—and so, too, are Rabbits, Hares, and Foxes.

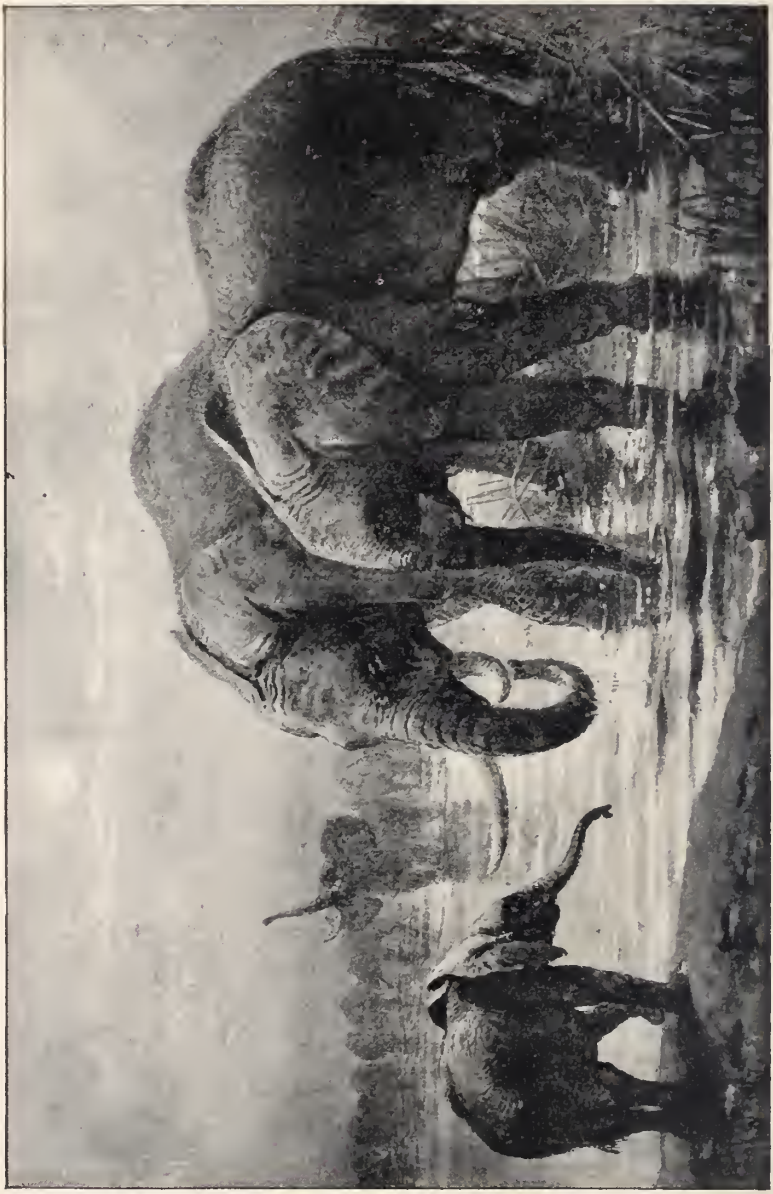
In concluding our brief survey we can but re-echo the words of Richard Jefferies, who wrote thus about these very Downs: "Discover some excuse to be up there always, to search for stray mushrooms—they will be stray, for the crop is gathered extremely early in the morning—or to make a list of flowers and grasses—to do anything, and, if not, go always without any pretext. Lands of gold have been found, and lands of spices and precious merchandise, but this is the land of health."

W. Percival Westell, F.R.H.S., M.B.O.U.

REVIEWS AND EXCHANGES.

The Zoological Society of London. By Henry Scherren, F.Z.S. Cassell and Co. Price 30s. net.

Unless, perhaps, we except the late Andrew Murray's "Book of the Royal Horticultural Society," we do not know of any British scientific society which can boast of so sumptuous a record of its birth and progress as this. As its second title runs, it is a sketch of the foundation and development of the Society, and the story of its farm, museum, gardens, menagerie and library; and told, as it is, largely in the words of official documents, the proofs moreover having been read by Dr. Chalmers Mitchell, the work may be taken as fully authorised. Mr. Scherren's name is a guarantee for its careful accuracy, especially on the more strictly scientific side, the identity of the animals to which reference is made. The twelve coloured plates of different parts of the Society's Gardens are fine specimens of printing; and there are also fifty black and white plates of very varied interest. We are permitted by the publishers to reproduce one of these,



AFRICAN ELEPHANTS, FROM A DRAWING BY JOSEPH WOLF.
(From "The Zoological Society of London," by kind permission of Messrs. Cassell & Co.)

taken from one of Joseph Wolf's unsurpassed water-colour drawings, the exhibition of which used, years ago, to be one of our favourite resorts at the "Zoo." Some of the earlier illustrations from the "Zoological Keepsake" seem very quaint now-a-days; but we surmise that many of those reproduced from the *Illustrated London News* were the work of Mr. Harrison Weir, whose death we have had so lately to deplore. This edition of a most interesting work, upon which we congratulate all concerned, is limited to a thousand copies. When Mr. Scherren comes to re-issue it, we would suggest that some portraits and biographical particulars of the founders of the Society and other eminent men who have been associated with its work, would add considerably to the interest of his story.

Fruit of Sessile Oak.

Leaf of Sessile Oak.

Leaf of Pedunculated Oak.

Fruit of Pedunculated Oak.

Transactions of the Hertfordshire Natural History Society and Field Club, vol. xii., part 6. Edited by John Hopkinson. Dulau and Co. Price 1s. 6d. net. This number contains reports on the meteorology, birds and phenology of the county for 1904, a description of Tertiary strata recently exposed in the Gade

Valley, and a discussion of "The Comparative Rate of Growth of a Pedunculated and a Sessile Oak at Bayfordbury." By the courtesy of Mr. Hopkinson, the author of the last-named contribution, we are able to reproduce here the illustrations of the leaves and acorns of the two varieties of Oak, from Selby's "Forest Trees." A full bibliography of British works dealing with these forms is added.

THE TOWING-PATH BY THE BASINGSTOKE CANAL. From "Woking and Ripley with their Surroundings." (By permission of the Homeland Association.)

Woking and Ripley, with their Surroundings. The Homeland Association. Price 1s. net.

As Londoners, with the help of motor-cars and bicycles, or on their own legs, become more acquainted with the country round the metropolis, they cannot fail to

recognise the many beauties of Surrey. Woking may not itself be very beautiful, nor, with the exceptions of Sutton Place, Newark Abbey, and Ockham Church, is there much of archæological interest in its immediate neighbourhood. But the wide stretches of heather and pine wood have a beauty all their own, and members of our Field Club will recall with pleasure the many charms of that most unartificial of artificial pieces of water, the Basingstoke Canal, of which, by the kindness of the Homeland Association, we are able to reproduce an illustration from this Handbook. With special chapters on the bird and plant life of the district by competent local workers, this is an exceptionally good example of the Association's guide-books.

The Wavenev Valley in the Stone Age. By William A. Dutt, 438, London Road, Kirkley, Lowestoft. Price 1s. 1d. post free.

This interesting paper on a portion of the Broads of Norfolk and Suffolk, re-tells the story of the palæolithic implements of Hoxne, and supplements it with the writer's own study of neolithic remains from the same neighbourhood. Mr. Dutt gives a useful sketch-map and three plates of implements, and his essay will prove of more than merely local interest to antiquarians.

Nature Calendar, 1906. Messrs. George Philip and Son. Price 6d. net.

This wall-calendar in twelve monthly sheets, tastefully printed on stout paper, will appeal to Selbornians, for it is almost entirely the "Naturalists' Calendar" as kept by White at Selborne, and by Markwick at Catsfield, from 1768 to 1793. We think that, for use to-day, some annotation is a desideratum, many of the names, such as "Serapias longifol, Wall Pepper and Hooded Willow-herb," being no longer familiar to ordinary students.

One and All Gardening, 1906. Edited by E. O. Greening. Agricultural and Horticultural Association. Price 2d.

The eleventh issue of this hardy perennial is, like its predecessors, full of interesting text and illustrations from cover to cover. It is, however, a pity that excellent and deservedly popular work such as this should be marred by the common inaccuracy of describing dry fruits as "seeds."

The Naturalists' Directory, 1906-7. L. Upcott Gill. Price 1s. 6d. net.

We are glad to learn that this useful book of reference, now in its tenth year, is meeting with increased appreciation. We hope all working naturalists will keep the editor well informed as to their addresses.

The Writers' and Artists' Year Book, 1906. Adam and Charles Black. Price 1s. net.

There are at the present day so many who desire to tempt fate with pen or pencil that a list such as this, of publishers and periodicals, literary agents, &c., with their special lines of business, must prove of wide utility.

The Horniman Museum: Handbook to the Library. London County Council. Price 1d.

As this is, in the main, a subject-index to the best modern English works on Natural History in the widest sense, including ethnology, sociology, and pre-history, it will be worth far more than its price to many besides those who can constantly visit the Museum at Forest Hill. It is the work of Mr. A. W. Pepper, the Librarian, as we learn from a prefatory note by Mr. Gomme, Clerk of the Council, in which we are glad to see an acknowledgment, such as we have on former occasions suggested, of Mr. F. Slade's authorship of the excellent hand-books previously issued.

Received—*Bird-Lore* for November and December; *Our Animal Friends* and *The Victorian Naturalist* for December; and *The Naturalist, The Irish Naturalist, The Animals' Friend, The Animal World, The Humanitarian, The Parents' Review, The Agricultural Economist* and *The Estate Magazine* for January.

NATURAL HISTORY NOTES.

324. The Balance of Nature.—I happened to visit the garden of a great botanist and horticulturist. No birds were suffered to exist in the precincts of the garden. The result was a plague of vermin and insects in the cherished plants. I was also in the garden of a determined enemy to all the feathered tribe, where the only thing to be considered was the fruit. This was ravaged by caterpillars, wasps and other insects. In my own garden I have an abundance of fruit, and the fruit and flowers are free from blight or insects or vermin—the flowers especially beautiful—because I encourage every bird I can into my garden, and feed them all the year round. The earth without birds would be a foul desert.

SURREY.

325. Weasel and Water birds.—I frequently find my way down to the little river Nar, 200 yards from my house, to a delightfully quiet spot close to the disused duck decoy, and the moat that once surrounded a grand old manor house. Here something is always cropping up that charms an observer's eyes and ears. One morning when standing in this spot by the stream, with a green sandpiper half a dozen yards off, I heard a strange cry not unlike a rabbit in distress, and saw a water-rail fly down the river and settle near me in the dead willow-herb at the water's edge. A weasel then ran down the river bank in pursuit of the water-rail, causing it to swim out into the stream. The actions of this bird in the water are very similar to those of moor-hen: like them it jerks the tail when swimming or on land. A dabchick was then turned out by the weasel from under the bank, and soon dived out of danger's way. Shortly after this as the weasel ran along a rail across the stream, the curious noise again began and continued to be uttered. On creeping forward to learn the cause I disturbed two water-rail and a snipe, and found that the cry proceeded from a moor-hen which was showing its objection to the weasel's presence. A water-rail is not to be seen swimming about every day, and the cry of the moor-hen at the sight of the weasel was such as I had never before known to proceed from any water bird. All this occurred within a space of 20 yards.

EDMUND THOS. DAUBENY.

326. Peregrine and Plover.—For some days past many thousands of Green Plover have congregated together on a large ploughed field near my house. Their numbers were so great that the sound of their wings and their cheerful cries were a daily delight to me. One morning as they rose in a huge cloud a peregrine made a swoop into their midst. The plover at once split up into companies of from 100 to 500 strong, rising to such a height as to be scarcely visible, and finally deserting the locality for the rest of the day. Next morning about a third of their number returned to their old quarters together with several herons, but were very silent and restless. Again they rose in fright, herons and all, and pursued the same tactics as before, the cause no doubt being the same as on the previous day. On my going to look for them on the third morning, the herons were keeping sentinel in the open, but only about a hundred plover were to be seen, the rest having made up their minds to retire from such a dangerous place. The swoop of a falcon causes more consternation in a flock of plover than a dozen guns.

Southacre, Swaffham,
December, 1905.

EDMUND THOS. DAUBENY.

327. The Argonaut and Flying Fish.—With reference to this cephalopod and its supposed "sail," I had an opportunity of observing a small "fleet" when crossing the Equator. They were very suggestive of the little boats on the river and pond in Kensington Gardens; but by watching them through an opera-glass, it was easy to see that the resemblance to a square white sail was chiefly in the shell itself projecting above the water and seen end-wise with the sun shining upon it. With regard to flying fish, it is sometimes said that they only skim over the surface of the water, but cannot fly. I watched many shoals of them, and observed they often rose up to clear a wave, as well as darted to the right or left before plunging again into the sea. These actions appeared to indicate that they had the power to do more than merely skim over the surface in a straight line.

GEORGE HENSLOW.

NATURAL HISTORY QUERIES.

69. **Unknown Birds.**—A pair of birds has haunted my garden for two or three years, remaining all the winter, attracted hither, I imagine, by some wood-owls that live in a large wired-in enclosure under some old yews. The birds in question are like a cuckoo in shape, and appear to have the beak of a cuckoo, and to be brown and grey in colour. They have long tails which they spread when flying, and their flight is undulating. They make a loud noise both when on the wing and perching, like a large clock being wound up, or a policeman's rattle. One day lately a large barn-owl appeared in a tree in the garden, where of course he was mobbed by all the little birds, and more than one pair of these strange birds appeared, making a deafening rattling noise. Are they likely to be the yellow-billed Cuckoo?

SURREY.

[On my consulting two eminent ornithologists they at once pointed out that the yellow-billed cuckoo would certainly not return annually or in winter, and expressed the opinion that the birds in question must be Missel Thrushes (*Turdus viscivorus*).—ED. *N.N.*]

70. **Insects at the Sea-side.**—Can any of your readers give me any information why earwigs and "summer-buzzers" are particularly prevalent during July at a seaside resort on the east coast, and also whether there is anything that can be used to kill them or prevent them from entering the house?

131, *Earlham Grove*, H. NORMAN GRAY.
Forest Gate, E.

[I understand that "summer-buzzers" are cockchafers (*Melolontha.*—ED. *N.N.*].

SELBORNIANA.

SIR MOUNTSTUART GRANT DUFF.—In common with the rest of the world of letters we have to lament the death of Sir Mountstuart Grant Duff, which took place on January 12, when he was within little more than a month of his 78th year. Distinguished as a politician, an administrator and a diarist, he found throughout a great part of his life a pleasing recreation in the study of plants. He was one of the earliest contributors to NATURE NOTES, and became a Vice-President of our Society.

DEATH OF MR. HARRISON WEIR.—Bird-fanciers and lovers of animals generally will have heard with regret of the death of Mr. Harrison Weir, the well-known artist, which occurred on January 4. Born in 1824, he became at an early age a member of the Institute of Painters in Water Colours, and was one of the original staff of the *Illustrated London News*. He was much interested in the work of our Society and visited Selborne with us on the centenary commemoration of Gilbert White's death. He was buried at Sevenoaks on the 8th, the funeral being attended by a large gathering of friends.

PURLEY BEECHES.—A renewed effort is being made to raise the small balance requisite to secure the preservation of this beautiful bit of Surrey woodland. A correspondent of the *Times* recently sent to that Journal a most interesting article on the subject, parts of which we reprint here.

Passengers by the main line of the Brighton Railway must be well acquainted with a particularly fine group of old oaks by which the train passes between Croydon and Caterham. Not quite so near the railway, but crowning a ridge of down a short distance to the east, is an equally fine cluster of beeches. One is tempted to imagine that both the Purley Oaks and the Purley Beeches must be survivals of some considerable tract of natural woodland. Purley, indeed, seems to have been nothing more than an "estate," though an estate of importance, about which hangs a curious literary interest. Towards the end of the eighteenth century the estate was brought by William Tooke, who happened to be a friend of John Horne, better known to posterity as Horne Tooke. Mr. William Tooke had troubles with the lord of the manor of the district, one Thomas de Grey. Mr. de Grey seems to have been an arbitrary gentleman; for, failing to score any success over his neighbour by litigation, he applied to Parliament for authority to make extensive enclosures of common lands and fields in Norfolk and Surrey. This proposal Mr. Tooke thought to be very prejudicial to his interests. He complained that the ordinary procedure applicable to an Enclosure Bill had not been followed, and urged the House of Commons to delay the passage of the Bill. A deaf ear was turned to his pleadings, and he saw himself about to be "deprived of a large portion of his estate, which was chiefly valuable on account of his right to fatten sheep on the neighbouring downs." In his extremity he applied to Horne, and that gentleman hit upon the humorous expedient of libelling the Speaker! A short philippic in one of the most prominent papers of the day brought Mr. Horne to the Bar of the House, where he delivered an eloquent defence of his conduct, comprising, presumably, a denunciation of De Grey's Enclosure Bill. The device was completely successful. Mr. Horne suffered nothing more serious than a few days' detention by the Serjeant-at-Arms, and the Bill was deprived of its obnoxious character. The friendship between Horne and Tooke was naturally cemented by the services thus rendered. Horne became a constant resident at Purley, and here he amused himself with the curious etymological disquisitions which were eventually published as "The Diversions of Purley," the author about the same time assuming the name of his friend and being adopted as his heir.

Satisfactory as were Horne Tooke's efforts to prevent enclosure in the eighteenth century, Purley has long since lost its commons. Its downs have been parcelled out, but have retained their general character of open country until recently. The enormous growth of Croydon has, however, of late years reached the neighbouring parish of Sanderstead, and houses are fast covering the Purley Downs. In these circumstances some public-spirited residents are endeavouring to save for the neighbourhood its most characteristic feature, the Purley Beeches. A beautiful bit of woodland it is.

* * * * * * * *

The whole wood extends to little more than thirteen acres. The owner has offered to make it over to the public for the sum of £5,400, which is but half its building value. It is proposed that the parish of Sanderstead, the rateable value of which is advancing by leaps and bounds, should find the bulk of this money (£4,000) by a rate of 2d. in the pound. This is the utmost that Sanderstead can do, for the rating powers of parish councils are small; the balance of £1,400 must be raised from outside, if the Beeches are to be saved. Croydon one would naturally expect to assist, but the rates of Croydon are abnormally high, the ratepayers have taken alarm, and at the moment it is useless to ask Croydon for anything. Private subscriptions have so far produced £430, nearly £1,000 is still wanting. An appeal to the Surrey County Council is in progress, and it would certainly be a very proper act on the part of that body to facilitate the preservation of a feature of the county which is at the same time so beautiful and so unusual.

SWISS ALPINE PLANTS—AN APPEAL.—We have received the following appeal from the *Ligue pour la Beauté* recently established in Switzerland.

May I be allowed to call the attention of members of the Selborne Society to the harm done to the Swiss flora by the numerous English visitors, who uproot

alpine flowers in order to send them or to take them home to fill 'alpine gardens' with them. A large percentage of these plants, uprooted at the time of flowering, must perforce die, and many kinds cannot thrive in England. Many of the rarer kinds have almost disappeared, and the rarer they become, the more they are sought after.

I am afraid that the leaflet "To Girls and Boys" might be addressed to grown up people too, for I have never yet met with people picking flowers in Switzerland who thought of leaving some to seed, or of not clearing a spot completely of the flowers that made it beautiful. This is more noticeable in English visitors, because their fondness for flowers is well-known.

Choulex, Geneva. R. DE LA RIVE.

PRESERVATION OF WILD PLANTS.—In the latest issued part of the *Journal of the Royal Horticultural Society* is the detailed paper on this subject read by the Editor of NATURE NOTES in August, 1904.

ENGLAND'S HEDGEROWS.—J. Fosbrooke, Ashby-de-la-Zouch, writes to the *Daily Chronicle* as follows :—

"The proposal of a correspondent to utilise the hedgerows for timber growing, will be heartily endorsed by all thoughtful people and lovers of the country. The particular charm of English scenery as compared with Continental used to be due to its wealth of hedgerow timber. A great change has occurred during the last twenty or thirty years, due to several causes, mostly connected with the economic and political changes that have taken place. The County Councils and District Councils are themselves in many parts of the country responsible for the spirit of vandalism that prevails. Not only do they insist on roadside hedges being kept as low as possible, but the presence of trees is resented as detrimental to the surface of the road, and even wide stretches at the roadside are denuded of all interesting wild growth on the plea of keeping them 'tidy.' It is high time that legislation stepped in and controlled the indiscriminate destruction that has been going on."

CHEAPSIDE'S HISTORIC TREE.—"Crowds of interested spectators in London last week watched some professional sawyers crawling about the 'rigging' of the handsome old Oriental Plane-tree, which for well over a hundred years has formed one of the chief attractions of Cheapside. For some time past the huge branches, which spread right over the two two-storey shops and well into Cheapside itself, have shown signs of breaking under the immense weight of the leaves and subsidiary branches, and in order to prevent an accident, and also to give more light to the surrounding premises, the churchwardens of St. Peter's, West Cheap, commissioned Messrs. W. Cutbush and Son, of Highgate Nurseries, to lop some of the larger branches and generally 'trim' up the upper part of the tree. This operation will take over a week, as, owing to the confined space in which the tree is situated, the branches have to be sawn off in small sections, and great care has to be exercised in directing the fall of the logs. The tree stands well over a hundred and twenty feet high, the trunk at the base being nearly three feet in diameter.

This well-known City tree stands in what was originally probably the churchyard of St. Peter's, West Cheap, but what is now simply a small railed-in garden about twenty or thirty yards square. A stone tablet on the wall of an old building overlooking this piece of ground bears the date 1687, and the encircling wall has several ancient tombstones placed against it on the inner side. All the summer through, and especially in the early spring, the tree is the rendezvous of thousands of chattering sparrows, who find welcome haven in its profusely-leaved branches, and evince no fear at the nearness of some of the surrounding buildings. Great consternation was expressed by those who first saw the cutting of the tree that it was being entirely felled, but preservation and not demolition is the object of the churchwardens. Looked at from the value of the ground on which it stands, this fine old tree is the most expensive in the world, abutting as it does on one of the world's richest thoroughfares."—*Manchester Weekly Courier.*

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

Objects of the Society.—To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) the skins and plumage of such birds as are not domesticated. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

Subscriptions.—The Council has great pleasure in acknowledging subscriptions of greater value than 5s. from the following members: Mrs. Brightwen, F.Z.S., F.E.S., £5 5s.; E. S. Morphew, Esq., £2 2s.; Lady Farrer, £2; Miss E. Lomer, £2; Miss C. Alston, £1 1s.; F. W. Ashley, Esq., £1 1s.; J. S. Budgett, Esq., £1 1s.; Capt. James Cundy, £1 1s.; Miss A. Garratt, £1 1s.; Sir John T. Goldney, £1 1s.; Miss Nicholls, £1 1s.; The Hon. Walter L. Rothschild, M.P., £1 1s.; C. Surgey, Esq., £1 1s.; W. H. Warner, Esq., £1 1s.; W. Whitwell, Esq., £1 1s.; Mrs. W. Greenwood, £1; Mrs. Lomer, £1; Miss Marshall, £1; Mrs. Lowther, 15s.; The Archbishop of Canterbury, 10s. 6d.; Cosmo Blore, Esq., 10s.; The Hon. Mrs. Boyle, 10s.; Miss E. B. Brand, 10s.; Miss J. Brand, 10s.; R. Evans, Esq., 10s.; A. J. Hall, Esq., 10s.; Lady Jenkyns, 10s.; W. W. Maw, Esq., 10s.; C. W. Ware, Esq., 10s.; Miss E. Wright, 10s.; O. V. Aplin, Esq., 7s. 6d.; J. Troubridge Critchell, Esq., 7s. 6d.; A. Culshaw, Esq., 7s. 6d.; Mrs. Hickman, 7s. 6d.; Rev. H. B. Hoare, 7s. 6d.; Ernest Swain, Esq., 7s. 6d.; Miss E. Gibbs, 6s.; C. M. Hall, Esq., 6s.; and a donation of 5s. from Miss I. Ellis.

New Members.—*Central Society.*—At the Council held on January 23, the following were elected members of the Society: Mrs. K. Anderson, Miss M. Cushman Baily, Miss C. L. Collier, Miss F. M. Collier, Mrs. Theodore Dury, Miss Innes, William M. Scott, Esq., Miss Honora Taylor, Miss M. Sunderland Taylor.

Brighton Branch.—Miss E. Bell, Brighton; Mrs. Paddison, Hove.

Hampstead Branch.—Miss Nye, Miss Alice Offer, A. E. Sibson, Esq., Miss F. Vyse, Miss Warren, Hampstead.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings when the Publications Committee meet (at present on the second Monday in the month), for the purpose of issuing books to Members.

The Hon. Librarian has pleasure in announcing the following additions to the Library, all kindly presented by the Editor: "Extinct Animals," by E. Ray Lankester. "Fishes I Have Known," by A. H. Beavan. "The Making of East Yorkshire," by T. Sheppard. "Nelson's Homeland," by James Hooper, and "Red Fox," by C. G. D. Roberts.

WINTER MEETINGS OF THE SOCIETY.

Saturday, January 13.—To a party numbering upwards of thirty, Professor Boulger gave a demonstration on the botanical books in the exhibition of old Natural-History books recently placed on view at the Natural History Museum, and on the collection, illustrating the history of the classification of plants, shown in the Botanical Department. The former collection is described in a valuable "Special Guide" (price 3d.) drawn up by Mr. B. B. Woodward, the Librarian, and both collections are discussed by Dr. Rendle, the newly-appointed Keeper of the Botanical Department, in an article in the January issue of *The Journal of Botany*. The first series examined comprises zoological and mineralogical, as well as botanical, works, starting from the prehistoric carvings and drawings in the caves of France, and the earliest "incunabula" of the printing press, and coming down to the work of Sir Hans Sloane, whose collections formed the nucleus of the British Museum. In calling the attention of the visitors to the books most interesting to the student of botany, the demonstrator endeavoured to supplement Mr. Woodward's Guide with a few biographical details. The second collection, beginning with Dioscorides in the original Greek, traces the history of taxonomy not only to Morison, Ray and Linné, but through the Jussieus, De Candolle, Lindley and Robert Brown, to our contemporaries Eichler and Engler. A vote of thanks to the leader terminated the proceedings.

NEWS FROM THE BRANCHES.

Hampstead.—The Committee of the Hampstead Branch has pleasure in acknowledging subscriptions of greater value than 5s. from the following members: T. J. Barratt, Esq., £1 1s.; Andrew J. Lloyd, Esq., £1; Cecil Clark, Esq., 10s.; J. H. Cottam, Esq., 10s.; Peter Hastie, Esq., 10s.; Miss Ross, 10s.; Mrs. C. Beach, 7s. 6d.: Miss Steinberg, 7s. 6d.; Miss Alice Steinberg, 7s. 6d.

Seaford (Junior). *November* 23, 1905.—The Rev. A. J. Richardson, Rector of East Blatchington, delivered an entertaining lecture on "A Tour in Switzerland," illustrated with lantern views. The lecturer was followed with close attention from beginning to end, and the fine series of slides was highly appreciated.

November 27.—A full muster of the Branch visited the interesting old town of Lewes. Special attention was first given to St. Michael's Church, with its round tower, of which feature there are only two other examples in Sussex. This church is noted for its fine architecture and many quaint brasses and monuments; among these latter must be mentioned a fine one on the north wall in memory of Sir Nicholas Pelham, who defended Seaford against the French. Lewes Castle was next visited, where is kept the Museum of the Sussex Archæological Society, and finally the party visited the ruins of the Priory of St. Pancras, thus filling a highly instructive and enjoyable day. The Misses Poole ably officiated as guides.

December 2.—Mr. H. H. Poole, Hon. Librarian to the Society, came down from London and gave a lantern lecture, entitled, "Gilbert White of Selborne," to a large gathering of members and friends. After recounting the chief events of White's life, and showing the unique position he holds as the father of Natural History, the lecturer carried his audience with him through the old-world village of Selborne, its picturesque cottages and church, and its charming scenery. The Wakes was then described, and by means of extracts from White's diary his quiet life and manifold interests were depicted. A hearty vote of thanks was accorded the lecturer at the close of the meeting.

Tottenham Grammar School (Junior).—This Branch, which consists of about fifty members, is now in full swing, and with the co-operation of the Clapton and North Middlesex Branches, it is hoped that some good work will

be accomplished. Negotiations are in progress with a view to joint meetings and excursions, and a successful issue is to be expected. The chief event so far has been an illustrated lecture by Dr. Vos, of Tottenham, on Spiders. The Hon. Secretary is Mr. C. H. Cox, B.Sc.

FORTHCOMING EVENTS.

COUNCIL AND COMMITTEE MEETINGS.

Monday, February 12.—Publications Committee, at 5.30 p.m.

Tuesday, March 27.—Council Meeting, at 5.30 p.m.

WINTER MEETINGS OF THE SOCIETY.

Saturday, February 17.—Visit to Westminster School, by permission of the Head Master. Assemble at 2.30 p.m. at the school porch in Little Dean's Yard, which can be reached either from the Cloisters or from Dean's Yard.

N.B.—The party is restricted, and only those provided with tickets can be admitted. These, up to the number prescribed, can be obtained from the Society's Excursions Secretary, Mr. H. H. Poole, 16, Heathcote Street, W.C. Send stamped addressed envelope. *Members only.*

Saturday, February 24.—St. John's Church and Gate, Clerkenwell. Meet at the Church in St. John's Square at 2.30 p.m. Guide, Mr. H. W. Fincham, who will give an address.

Saturday, March 3.—Visit to an Ivory, Mother-of-Pearl and Tortoiseshell Warehouse. Meet at Mr. M. Myers' Warehouse, 1, George Street, Tower Hill (close to Mark Lane Station), at 2.30 p.m.

ANSWERS TO CORRESPONDENTS.

W. C. T. B.—The fullest account, so far as British plants are concerned, is in "Botanical Names for English Readers." By R. H. Alcock; Heywood (1884). Reference may also be made to Mr. Jackson's "Glossary," recently reviewed in these pages, or to Théis, *Glossaire de Botanique* (Paris, 1810).

Ida Roper.—An old specimen of *Stereum hirsutum* gone mouldy.

S. V. Body.—*Parrotia persica*, the Persian Iron-tree, a member of the *Hamamelidæ*, generally blossoming in February.

M. Teesdale.—The true "Rose of Jericho," and "the rolling thing before the whirlwind" of Psalm lxxxiii. 13, and of Isaiah xvii. 13, is probably *Anastatica*: "Semper viva" is probably a made-up shop name; and the plant figured is apparently *Selaginella convoluta, S. involvens* or *S. lepidophylla*.

The passage about canker and cancer is, like the report of Mark Twain's death, "greatly exaggerated." There is only a remote analogy between the two things. The Pyrenomycetes are not heterœcious, and certainly *Nectria* is innocent.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 195. MARCH, 1906. Vol. XVII.

A NORTH COUNTRY WOOD IN WINTER.

SEEN from a distance the woods present a uniform hue of brown, varied here and there by the dark green of the Holly, Pine or Yew. The whole appears dull and dreary, but by penetrating into these woods one finds a new world around one. Here silence reigns. Occasionally the wind makes a pine-bough moan, or a bird twitters; but everything has a very peaceful appearance. But Nature is not slumbering, as the lover of it will find, in whatsoever direction he may turn. Here a young Ash is festooned with the beautiful fruit of "Traveller's Joy," or, as it is called in the country, "Old Man's Beard." There a stunted Hawthorn is decked with its ruddy haws. The graceful little Spleenwort, nestling amongst the limestone rocks, is now at its best, while the Hartstongue and the silvery Cup-moss are sure to attract the notice of the passer-by. The gaudy hips on the wild Roses add greatly to the landscape, and the fruit of the Guelder-rose and Wayfaring-tree still hang limply from the bare branches.

Half-a-dozen or more Long-tailed Tits are busy in yonder Spruce fir; a Jay silently glides along the glade in the valley below, and a cock Pheasant flies out of the bracken close to the path. A little further on a glossy Blackbird dashes screaming from a Holly.

In the valley below the wood-cutter has been at work, clearing away the undergrowth of Hazels, and preparing to make them into bobbins and hoops for barrels. Only the large forest tree (Oaks chiefly) are left standing. After the woods have been thu cut down, it is almost impossible to recognise the spot. A present the ground is covered with stacks of wood; but these are soon cleared off, and before long the place will be covered with its Spring carpet of Hyacinths, Sorrel, Primroses, Anemones and Violets. Within a few years the Hazels will have grown up again, and will be cut down once more in fourteen years time.

Here a few wild Crab-apples still hang on the otherwise bare tree; there the Honeysuckle is sending out its new buds. Overhead a Wood-pigeon's nest stands out darkly against the sky, and in the thorn-tree at the side of the path a Robin's nest is now quite visible. On that rocky height, where the golden flowers of *Sedum acre* carpeted the ground, where the green Sage swayed in the wind, and where the Narrow-leaved Helleborine reared its stately head, all is now bare, excepting for a few ferns and for the dark green Ivy which clings to the white rocks. On the crest of the hill the hardy Pines strain under the blast which is blowing off the neighbouring fell; but down below, where the steep path skirts the foot of the crag, there is comparatively little wind. The tall Larches, now so brown, rise like rockets from out the brushwood, where Tom-Tits and Squirrels delight to assemble. In parts the ground is covered with trailing Ivy and brambles, only too ready to trip up the wanderer. Great Pine-roots cross the paths, forming small waterfalls in wet weather. Close by lies an uprooted Larch, blown down by some past gale, its great surface-roots rising high above one's head, with quantities of earth and stones clinging to them. Underneath the rabbits have been at work. While following the path, a large bird, interrupted while scratching in the moss, flies away through the bushes, keeping low down so as to avoid the branches until it reaches an open space, where it swings round a corner and is quickly lost to sight. Just behind that stony mound where the Grayling butterflies swarmed last August are the ponds inhabited by the Newts—queer creatures which are most interesting to watch.

At the foot of the fells a few Firs, silver Birches, Rowans or Mountain Ashes, and Pines attempt to grow, and the slopes are dotted over with Whin and Juniper. The stone wall, which separates the woods from the fell, is covered with soft green moss, yellow lichen, and many kinds of ferns. There, by the gate, is a farmer busily loading his cart with bracken from off the hillside, where his sheep are now wandering. By the old lime-kiln in the hollow the Carline Thistle may be found, where the Gentian, Eyebright, red Bartsia, Centaury and Milkwort used to grow in the summer. On the top of the fell, which is about eight hundred feet above the sea-level, nothing grows except bracken and coarse grass, but here and there a weathered Hawthorn clings to the rocks. These rocks are very smooth, with deep fissures twenty feet or more in depth. These are filled with ferns which are out of reach of those "trippers" who consider it their duty to dig up (generally only to throw away again) every beautiful or rare plant that they come across. Bird-life is abundant: Tits of several kinds, Magpies, Jays, Larks, Linnets, Yellow-hammers and Sparrow-hawks, are especially common; but the hawks are being killed off. Hares, Rabbits and Squirrels are abundant also, and Badgers are occasionally seen.

Fernleigh, Grange-over-Sands. R. C. LOWTHER.

PREHISTORIC TOMBSTONES.

SO much controversy has of late years centred around Stonehenge that the public is in danger of forgetting that we possess other ancient stone monuments. The havoc wrought by prosaic husbandmen and matter-of-fact masons has been grievous, yet these monuments, grim and fretted by a thousand storms, are still numerous, massive, and mysterious. Such remains are termed by the archæologist "megalithic," a word which, strictly denoting a "big stone" relic, is yet conveniently extended so as to embrace barrows and earthworks. There is, indeed, good reason for the inclusion of burial mounds, for the Neolithic, or long, barrows at first often concealed large structures of stone, from the simple dolmen, shortly to be described, to the complex tomb with its galleries and subsidiary recesses. Even the round barrow which belonged to the Transitional, or to the later stage of Bronze culture, not unfrequently covered small stone chambers or cists, and many earthworks, again, are plainly connected with the stone monuments in their immediate neighbourhood.

Dismissing from the mind most of the popular lore about "Druidical stones," it may be affirmed that some of the monuments, at least, date from the time of the occupation of Britain by the Iberians, that little, long-headed, swarthy race which ushered in the Newer Stone Age. Other objects of this nature, probably the majority, were raised by the Celts of the Bronze period, an epoch thus alluded to in Sir Francis Palgrave's "Visions of England":—

> "Dark rites of hidden faith in grove and moor;
> Idols of monstrous build,
> Wheel'd scythes of war,
> Rock tombs and pillars hoar."

Expressing this antiquity roughly in figures, we may say that these stone monuments date back from three or four centuries before Christ, to the same number of thousands of years. Their distribution in space carries us from the Himalayas to Peru, and from Denmark to the isles of the Southern Pacific. Some seven or eight distinct types of monuments are discernible, and specimens of each are extant in Britain. The simplest kind is the vertical standing stone, or menhir, to which the provincial name of long, hoar, or tingle-stone is given. Good examples occur at Motteston, in the Isle of Wight; Minchinhampton, in Gloucestershire; Rollright, in Warwick; and Studland, near Swanage. Wherever it is evident that a menhir is not merely the survivor of a row of stones of which the other members have been destroyed, we may conclude that this ancient form of obelisk is commemorative—perchance of a burial, or it is a tribal boundary stone. It is interesting, moreover, to notice that during the course of ages, the menhir has been transformed into

the modern churchyard headstone, a development well illustrated in a series of drawings shown in the Rev. S. Baring-Gould's "Book of Dartmoor." This evolution, particularly in France, was rendered gradual by the employment, during the early Christian era and onwards, of a shaped menhir or "lech," which was surmounted by a cross.

A number of menhirs placed in a direct line gives us the alignment or stone row. This type of British monument exists chiefly in Devon, Cumberland, and Caithness. Mr. Baring-Gould reckons fifty stone-rows on Dartmoor, and states that they usually start in cairns or mounds of stones and terminate in a "blocking" slab placed crosswise. In the Erme valley, a line of upright blocks has been traced for 10,840 feet, though in one place the course swerves to avoid a precipitous bank. The grandest specimens of the alignment are admittedly not British, but are to be seen at Carnac, in the Breton department of the Morbihan, in North-western France. Eleven rows of pillars are there visible, and they extend, with a break here and there, for about four and a half miles. In spite of wanton theft and spoliation, some 3,000 of the component monoliths are still left. Their height varies from 3 or 4 feet, the most common size, to 12 or 13 feet; but one stone, now unfortunately recumbent and broken, is over twenty yards long. When we seek for their original purpose we find ourselves in a great difficulty, so numerous are the theories, or rather hypotheses, put forward. To these Carnac stones one might apply the lines borrowed from Sir Philip Sidney's description of Stonehenge :—

> "That neither any eye
> Can count them just, nor reason reason try
> What force them brought to so unlikely ground."

M. Zacharie le Rouzic, the Curator of the Museum founded at Carnac by that excellent Scotchman, James Miln, is of opinion that, whilst the alignments are of funereal origin, they are not actually tombs, or at most, only exceptionally so. Among other considerations, he urges that the stones have been erected at one time, not at intervals, and that they diminish in size towards the east. The most recent explanation, though scarcely satisfactory, is based upon comparative customs, observed among such peoples as the Bedouins and the Khassias of Brahmapootra, and teaches that the stones were set up by the members of a tribe after the burial of their chief.

The next class of remains embraces cromlechs or "curved stones," a term which properly indicates upright stones arranged in a circle, although the name has been erroneously given to the succeeding group, the dolmens. Well-known cromlechs exist at Penmaenmawr, Portisham, in Dorset; and Rollright, near the borders of Oxford and Warwick. The largest cromlech north of the Tweed is at Stennis, in Orkney. Most famous of all is Stonehenge, concerning the stones of which Pepys wrote, "God knows what their use was. They are hard

to tell and may yet be told." Condensing into a line or two an account which properly requires several pages, Stonehenge may be described as a compound cromlech, the constituent parts having apparently been erected at different times, but belonging, as evidenced by Mr. Gowland's excavations in 1901, mainly to the Neolithic Age, perhaps about the period of 2,000 B.C. When perfect this monument comprised six orders. Reckoning inwards, these were: (1) A circular mound with its avenue; (2) a colonnade of sandstone trilithons, each consisting of two uprights with an impost or lintel; (3) a ring of unhewn pillars of far-fetched syenite; (4) an ellipse, or rather horsehoe, of huge trilithons; (5) a second ellipse of syenite columns; and (6) a recumbent block of micaceous sandstone placed centrally. Out of a score of speculations as to the intention of the first builders of Stonehenge, we select the one which supposes it to have been a sepulchral shrine, that is, a burial place which was afterwards devoted to religious uses. This is the view adopted by Mr. Edward Clodd, and it was further conjectured by Mr. Arthur J. Evans that the object of veneration was, at all events, in the later ages a sacred tree. Of the gigantic circles of Avebury, a few miles from Marlborough, only the ramparts and about thirty stones remain. Aubrey wrote of Avebury as "exceeding in greatness the so renowned Stonehenge as a cathedral doeth a parish church"; but since his day, 650 stones have disappeared to build the modern village within the ramparts. Proceeding with our list, we next come to the dolmens, or "table-stones," which consist of two or more pillars surmounted by a capstone. Beautiful specimens are found, more or less intact, at Drewsteignton, Devon; Lanyon, in Cornwall; Kits Coty House, in Kent; Capel Garmon, near Llanrwst; and Island Magee, opposite the town of Larne, in Ireland. It is probable that many of the monuments of this group—some authorities would say all—are merely the underlying chambers of barrows, the soil above having been removed for agricultural needs. Besides the simple dolmens, long, chambered varieties are met with: a good example occurs in the barrow at New Grange, County Meath. The dolmen may be extended until it forms a covered way, or *allée couverte*, and again, a double row of menhirs may be roofed for the same object, but this structure is not typically British. Then we get the kist-vaen, or "tombstone," a small closed chamber, most commonly found in barrows and concealing the remains of the dead. The galgal, or cairn, is to be looked for on the elevated moorlands of Scotland and the south-west of England: a world-renowned specimen exists on the hill of Saint-Michel, Carnac. Lastly, a few rude stone bridges, justly included as megalithic, may be recorded as of probable Bronze Age, particularly Tarr Steps, which crosses the Barle at Winsford, on Exmoor.

Having now shown that there are other ancient treasures besides Stonehenge which need guardianship, it simply remains

to beg Selbornians and others to aid in cultivating public opinion so that the remnant may be spared. Do we not all agree that it should be a punishable offence to injure or remove these all too few survivors from antiquity?

WALTER JOHNSON.

NOTES BY AN AMATEUR NATURALIST.

NATURE for the most part uses soft and subdued colours when she paints her wintry landscapes, and a great stillness and hush lie over the sleeping woods. The oak leaves of the past summer are fallen, and lie in brown masses beneath the trees, which stand like sentinels silent and waiting until the soft and loving touch of Spring re-awakens them.

At this time of the year, when the evenings draw in, we can feast our eyes on the smoky blues and greys of the rising mist, as it creeps slowly along the valley and spreads over the meadows. These quiet hues are infinitely beautiful and restful, and cast a bluish haze over the distant brown woods as they dream on the far-off horizon.

From this month of December the rattle of the Greater Spotted Woodpecker may be heard right on until April. It is a baffling call and difficult to locate. This is partly owing to the motions of the woodpecker as he ascends the trunk of some tree, and partly to his call being of a ventriloquous character. Sometimes it rises to such a volume of sound that it seems incredible that such a small bird can produce it: at others—and then it possesses a magic charm—it is merely a faint purr or vibration on the distant air. This, of course, depends on his whereabouts in the wood. It is never easy to find him; but he is worth stalking.

There are beautiful and interesting wild creatures all around us, and yet many people walk past them with wide-open, unseeing eyes, unconscious that they exist. The little bats that have ventured forth from their winter quarters, attracted by the warmth of the sun, how few observers have noticed them hawking up and down after their prey, in these last few months!

Watch a family of Long-tailed Tits as they play hide-and-seek among the twigs of some oak, and, after they have finished their game, fly off, one after the other, to another part of the wood, looking like a flight of feathered arrows, thrown with careless grace against the sky. They are restless and buoyant little birds, and never stay long in any one locality. They keep also to the higher branches of the trees, and, being shyer and less common than the Great, Blue, Cole, and Marsh Tits, would often pass unnoticed if it were not for their faint call-note, "zit, zit," which at once attracts a student of Nature.

We all look forward, and rightly, to the enchanted time when the Spring migrants come back to us; but we should set more value on the wild creatures that remain faithfully with us all through the dark days of winter. Throughout the year there is always a picture on Nature's canvas, painted in with vivid colours so that all may see; but how few of us are even conscious that it is there!

M. C. B.

THE BIRDS' PETITION.

ONE of the most remarkable legal documents on bird protection is the Birds' Petition, by Senator George F. Hoar, Senior Senator from Massachusetts. When this was presented in the Massachusetts State Legislature the enthusiasm that it aroused was so great that it passed through both Houses like a whirlwind.

This famous petition should be read in every school and home. It will never grow old, and should be read by every person at least once every ten years:—

"'To the Great and General Court of the Commonwealth of Massachusetts, we, the song-birds of Massachusetts and their play-fellows, make this our humble petition. We know more about you than you think we do. We know how good you are. We have hopped about the roofs and looked in at the windows of the houses you have built for poor, and sick, and hungry people, and little lame, and deaf, and blind children. We have built our nests in the trees and sung many a song as we flew about the gardens and parks you have made so beautiful for your own children, especially your poor children, to play in. Every year we fly a great way over the country, keeping all the time where the sun is bright and warm, and we know that whenever you do anything, other people all over the great land between the seas and the great lakes find it out, and pretty soon will try to do the same thing. We know; we know. We are Americans just as you are. Some of us, like some of you, came from across the great seas, but most of the birds like us have lived here a long while, and birds like us welcomed your fathers when they came here many years ago. Our fathers and mothers have always done their best to please your fathers and mothers.

"'Now we have a sad story to tell you. Thoughtless or bad people are trying to destroy us. They kill us because our feathers are beautiful. Even pretty and sweet girls, who we should think would be our best friends, kill our brothers and children so that they may wear their plumage on their hats. Sometimes people kill us from mere wantonness. Cruel boys destroy our nests and steal our eggs and our young ones. People with guns and snares lie in wait to kill us, as if the

place for a bird were not in the sky, alive, but in a shop window or under a glass case. If this goes on much longer, all your song-birds will be gone. Already, we are told, in some other countries that used to be full of birds, they are almost gone. Even the nightingales are being all killed in Italy.

"'Now we humbly pray that you will stop all this, and will save us from this sad fate. You have already made a law that no one shall kill a harmless song-bird or destroy our nests or our eggs. Will you please to make another that no one shall wear our feathers, so that no one will kill us to get them? We want them all ourselves. Your pretty girls are pretty enough without them. We are told that it is as easy for you to do it as for a blackbird to whistle. If you will, we know how to pay you a hundred times over. We will teach your children to keep themselves clean and neat. We will show them how to live together in peace and love and to agree as we do in our nests. We will build pretty houses which you will like to see. We will play about your gardens and flower-beds—ourselves like flowers on wings—without any cost to you. We will destroy the wicked insects and worms that spoil your cherries and currants and plums and apples and roses. We will give you our best songs and make the spring more beautiful and the summer sweeter to you. Every June morning when you go out into the field, oriole, and blackbird and bobolink will fly after you and make the day more delightful to you, and when you go home, tired, at sundown, vesper sparrow will tell you how grateful we are. When you sit on your porch after dark, fife bird and hermit thrush and wood thrush will sing to you; and even whip-poor-will will cheer up a little. We know where we are safe. In a little while all the birds will come to live in Massachusetts again, and everybody who loves music will like to make a summer home with you.'"

LETTER TO THE EDITOR.

Flora of North-west Kent.

An Invitation to Naturalists.

Dear Sir,—For some time past a few local naturalists have been working towards the compilation of a local flora to supplement the "Flora of Kent," by Hanbury and Marshall, published in 1899. Owing to the rapid encroachment of building in the suburbs many plants which were fairly abundant a few years ago are fast disappearing, and it is much to be desired that we should have a record of their last appearances. The undersigned would be glad to receive lists of plants found in the neighbourhood. It is proposed to limit this local flora to districts 1 and 2 on the map in Hanbury and Marshall's "Flora." It is, of course, important that a printed list should be strictly

accurate, and friends are therefore asked to compare notes, when possible, before sending in lists. They are also asked to carefully name exact locality and date of each find. In all cases where the least doubt is felt, the specimens themselves should be sent for verification to the Rev. A. H. Nutting, Holy Trinity Vicarage, 22, Rectory Place, Woolwich.

We are, yours faithfully,

C. H. GRINLING,
17, *Rectory Place, Woolwich.*
ALBERT E. MORRAN,
59, *Balloch Road, Catford.*
W. L. T. MINTERN,
7, *Kirk Lane, Plumstead.*
A. H. NUTTING,
Holy Trinity Vicarage, Woolwich.
A. M. TYNEMOUTH,
25, *Greenvale Road, Well Hall, Eltham.*

REVIEWS AND EXCHANGES.

Bulletin of the British Ornithologists' Club, vol. xvii. *Report on the Immigrations of Summer Residents in the Spring of* 1905. By the Migration Committee of the Club. Illustrated with 32 maps. Witherby and Co. Price 6s.

Though at a first glance 6s. may appear a high price for 127 pages octavo in a paper wrapper, directly we examine the thirty-two valuable maps of England and Wales by which this report illustrates the migratory course of the twenty-nine species investigated we see that this charge is fully justified. The proceeds of the sale of the report are, moreover, to be devoted to the continuation of the work of the Committee. The interesting conclusion is arrived at that two routes "appear to be taken by birds of passage through this country—the one from Devon and Dorset, through the West of England and North Wales, and so out of the country, and the other from Sussex and the south-eastern corner of England, probably up the south-eastern coast and out of the country from Norfolk, and possibly, from still further north."

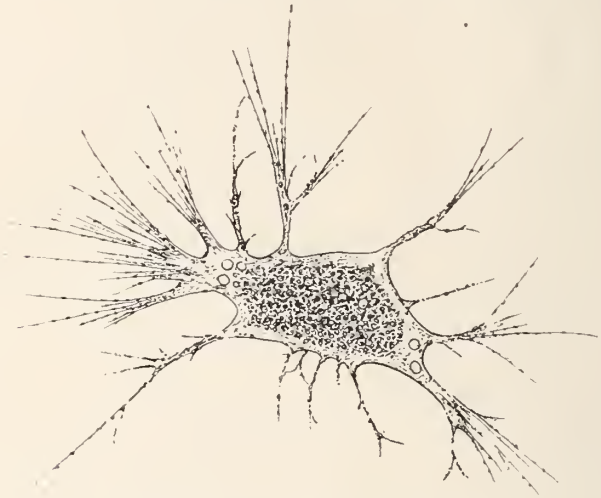
Birdland Pictures: Twenty-four Illustrations from Photographs direct from Nature. By Oliver G. Pike. Crofton Publishing Co., Brockley. Price 3s. 6d. net.

This is a beautifully printed portfolio of fine enlargements from Mr. Pike's well-known photographs of bird-life. Each plate is about 9 in. by 7 in. and is accompanied by a page of letterpress. The subjects are chosen from various habitats, from the Razor-bill, Gannet and Puffin of the shore, to Owls, Blackbird and Whitethroat, and all are alike admirable. Three or four pictures of nests and eggs without the parent birds are included. The inaccessibility of many of the subjects seems to have necessitated the employment of a relatively small plate, and in its enlargement, whilst the bird is in accurate focus, the surroundings, such as foliage, are occasionally somewhat blurred; but this, perhaps, as in the works of some great painters, serves but to enhance the effect of the bird-portrait.

The British Freshwater Rhizopoda and Heliozoa. By James Cash, assisted by John Hopkinson. Vol. i., Rhizopoda, part 1. Ray Society, 1905. Price 12s. 6d. net.

While the complexity of the highest animals affords problems insoluble by the biologist, the simplicity of structure of those at the base of the series presents similar problems in a form which proves attractive by holding out good hopes of

solution. The Rhizopoda, though mostly exceedingly minute, are for this reason of the greatest interest to the student of life; and the Ray Society does well, in this the two-hundredth anniversary year of the death of the great English naturalist from whom it is named, to begin the issue of a systematic work dealing with the British representatives of this group. A brief introduction deals with the life-history, distribution and method of collecting; but Mr. Cash expressly disclaims any special study of the physiology of the group: his object is mainly descriptive; whilst Mr. Hopkinson, the Secretary of the Society, furnishes a



Chlamydomyxa montana, × about 400.
(From "The British Freshwater Rhizopoda.")

copious synonymy and is later to add a bibliography. An examination of the British localities recorded for each species at once shows how inadequate as yet has been the collecting of these lowly organisms. Many more workers are required throughout the British Isles before we can be said to know anything of their local distribution; and nothing is more likely to lead to such more extended study than the existence of such a descriptive account as that of which this is an instalment. Some thirty-nine species, with their varieties, are described, belonging to seventeen genera, and these descriptions are illustrated by sixteen excellent lithographic plates, nine of which are in colour, together with thirty-two illustrations in the text. One of these latter we are permitted to reproduce.

The Irish Society for the Protection of Birds. Second Report, 1905.

Though as yet a very young society, the Irish Bird Protection Society can give a very good account of its stewardship. Its roll of members is not yet large, nor has it control of large funds; but it employs a watcher to guard the Terns at Malahide, has issued a variety of leaflets, is undertaking educational work, and has organised a public lecture. We wish them "more power to their elbow."

Annual Report of the National Association of Audubon Societies for 1905.

Well may Mr. William Dutcher, the President, be proud of the Report which he had to offer. With thirty-six State Audubon Societies, maintaining six reservations or bird refuges and a number of paid wardens, this newly incorporated Association fully justifies its existence. The Report is illustrated with some interesting bird photographs.

The Nature-Study Review for November contains several excellent articles, notably a very timely warning against the reckless guess work of the newer

teleology which too often passes for Natural History, as exemplified by a paper on "Plants that Hide from Animals." This dealt with underground stems such as artichoke tubers, aquatic plants as a whole, climbing plants, the seeds of *Ricinus*, said to mimic pebbles, and those of an *Iris* that drive off browsing animals by rattling like a rattle-snake!

The University of Colorado Studies, vol. iii., No. 1. Boulder, Colorado. Price 50 cents.

Of the seven papers here issued two only come within our ken, one on "Extinct Glaciers of Colorado" and "Contributions to the Natural History of the Rocky Mountains," by Prof. T. D. A. Cockerell, which deals with spiders, beetles, *Coccidæ*, bees and flowering plants.

The Plant World for November and December shows the improvement which has marked the recent issues. The former number has an article entitled "The Mistletoe," which deals, however, with many plants of similar habit, and one on "The Influence of Pollination upon the Development of the Hop," which reaches the same conclusion as that commonly held by English growers, viz., that pollination serves as a protection against mould and is conducive to stronger development of the valuable resin. Mr. Clute's conclusion, stated in the December number, that spinous "plants produce thorns and prickles . . . because it is their nature to," can hardly be termed illuminative.

The Garden Album and Review for January. Edited by John Weathers. Simpkin, Marshall and Co. Price 7d. net.

This is the first number of a new monthly magazine of horticulture under the very competent editorship of the author of the "Practical Guide to Garden Plants." Each number is to have four quarto coloured plates, and judging from the four in this first number, this renders the magazine phenomenally cheap for 6s. 6d. a year, post-free.

Educational Postcards. The Country Press, of 19, Ball Street, Kensington, W., are issuing a novel series of educational postcards, the first example of which is a series of pictures, on seven cards, of the 42 species of British Ferns, from the Nature printed plates of Mr. Francis George Heath's work, "The Fern Paradise."

Received: *Our Animal Friends* and *The Victorian Naturalist* for January; and *The Naturalist*, *The Irish Naturalist*, *The Animals' Friend*, *The Animal World*, *The Humanitarian*, *The Agricultural Economist*, *The Parents' Review*, and *The Estate Magazine* for February.

NATURAL HISTORY NOTES.

328. Minks, Musk-rats and Otters.—A recent issue of the *Bangor News*, *U.S.A.*, contained the following interesting note on minks, musk-rats and otters in the States: "As a rule, swamp, or stream, or pond, where musk-rats are plentiful, will hold a good number of mink. The fisher-cat and the otter are not so fond of musk-rat flesh, though no mink will think of going fishing when it can find musk-rats. The fisher-cat is an animal that roams abroad very much. At times a man may go fishing on a lake near Bangor, for example, and have his pickerel stolen almost from under his nose, and again he may fish for days and weeks and never see a track of one of these animals along the shore. The impression is among hunters that fisher-cats are gaining in numbers, and the reason for the increase is said to be the fact that many brooks and ponds have been newly stocked with trout and land-locked salmon.

"One can live about the lakes and ponds of Maine a long time before he sees an otter. In fact, the so-called black otter of the northern streams will soon be very rare. Still, if a person will walk along the steep banks to inland lakes in January and February, his chances of finding an otter slide are very good. According to the writer's belief, as a rule, otters are more social in their habits than mink or fisher-cats. From inland lakes comes the report that men have seen as many as ten or a dozen of these slim and graceful creatures sliding and snorting and racing about in the moonlight in great glee. When driven by stress

of hunger, an otter will often break into a hen-coop, and after gorging itself with raw poultry will flatten itself on a beam and sleep soundly, not in the least disturbed by the going and coming of human foes."

Fisher-cat is the American name of the pekan, wejack, black cat, or Pennant's Marten. It is the largest North American carnivorous quadruped of the family *Mustelidæ*, and subfamily *Mustelinæ*, with the exception of the wolverine, and is so called from its habit of catching fish.

37, *Alwyne Villas, Canonbury,* CHAS. P. J. HANNETT.
February 10.

329. Foxes.—Foxes are known to be very careful over their hunting grounds, especially in proximity to their earths ; and this carefulness is to be observed, not only in the adults, but even in the cubs. The animals on which they usually prey are often left untouched round the foxes' home ; and it is even asserted that nothing is killed on the side of the hill in which that home is made. In spite of this, at the mouth of the earth itself the remains of the creatures on which they have fed are frequently to be seen. Some curious instances with regard to their habits in these respects have occurred round here. In a small patch of nettles within a few feet of the mouth of the foxes' earth a partridge placed her nest, and brought off her brood. Round this nettle-bed the cubs were constantly to be seen, and in it they played hide-and-seek. In another case the entrance to an earth was surrounded by five or six rabbit holes, the tenants of which were unmolested by their next-door neighbours. In a third instance a litter of cubs was placed in a large pit surrounded by fencing, from which there was no escape, and in which there were a number of rabbits. None of these were attacked by the cubs, though they would seize a dead rabbit in full sight of the person who had shot and thrown it to them.

One would almost suppose that among foxes there is a code of honour not to take life in close proximity to their homes.

EDMUND THOS. DAUBENY.

330. Rooks.—On farm after farm round here the cornstacks have been threshed in order to save them from being pulled to pieces by rooks. As in a season like this, severity of weather, and consequent lack of food, cannot be the cause of this depredation, I suspect we have been subjected to a greater immigration of foreign rooks than is usually the case. When staying at Aldeburgh last October, I was impressed with the number of these birds that landed there, many thousands passing daily within sight of the town from over the sea, a sample probably of what occurred all along the coast. Before the breeding season most of these aliens will have recrossed the English Channel.

January 7, 1906. EDMUND THOS. DAUBENY.

331. Rooks and Recollections.—With reference to the large plane tree at the corner of Wood Street, Cheapside, mentioned in NATURE NOTES for February, will you allow me to say that I remember it well in the year 1837. It was a large tree then, and it was crowded with the nests of rooks, who built there every year. A very few years afterwards, a rather high scaffolding was erected close to the tree. I think it was for the purpose of taking down the tower of the Church, and I think that at the same time the shops in front were somewhat raised in height. The scaffolding frightened away the rooks and they never returned.

About the same time the rooks were banished from the White Tower of London. I remember them building their nests every year in the crowns at the top of the four towers. The officers and their families who lived in the Tower objected to the rooks, and had the crowns wired over, so that the rooks could not build in them, and "the Royal Rooks," as they were called, were banished for ever from the Tower.

It was after this that the moat round the Tower was drained and made into a dry ditch. Previous to that the water flowed from the Thames into the moat by Traitors' Gate. Stone steps led down to the boats and barges after they had passed in through the gate, which opened in two parts. Many a one passed through that Gate on his last earthly journey.

When I was a very small child, I remember well being taken to the Tower to

see the lions that were kept there. I was allowed to handle a little cub that was born the night before. There were three of them. Thinking I was to keep the cub, I remember that it was one of my greatest sorrows parting with it. It made an indelible impression on my memory.

Hampstead. February 19, 1906. PETER HASTIE.

[Were not the "rooks" at the Tower, jackdaws?—ED. *N.N.*]

332. Carrion Crows and a Dog.—Birds generally are very tame at Kew, and some are daring. There are usually some carrion crows on the Green and in the garden near my house. This season there have been three nearly always in company, and they will allow persons to come within two or three yards before rising. Last Sunday morning my wife called my attention to the amusing behaviour of two of these crows and a rough-coated terrier. The dog was picking a bone on the Green, just in front of my house, and the two crows sidled up from different directions towards the dog; then he let go his bone and made for one of them. The other crow promptly seized the bone and commenced feeding, whereupon the dog turned his attention to this crow. It allowed the dog to get very near and then conveyed the bone a short distance and recommenced picking it. This movement was repeated time after time, the distances varying from a dozen to perhaps fifty yards, and the crow without the bone was not the least disturbed by the dog racing past it in pursuit of the crow with the bone. It was very funny indeed, and gave one the impression that the crows were taking it out of the dog and enjoying the sport. Finally one of them carried off the bone.

Apart from this incident the antics of these crows often amuse us.

W. BOTTING HEMSLEY.

333. Chaffinch's Nest in Heart of Elm.—Messrs. John Carr, junr., and Co., St. Lawrence Saw Mills, Newcastle, write: "On the 3rd inst., whilst sawing an English elm tree from Hawick, which in its usual course was slabbed on all sides, and then a two and a half inch plank was cut off, a hole was noticed leading towards the heart of the tree. The next saw cut revealed a chaffinch's nest, containing three eggs. The nest was completely grown into the tree, no sign whatever being noticeable from the outside. Both the nest and eggs were quite intact, but unfortunately the latter broke when touched, and coming in contact with the air.

January 30, 1906.

334. House-martins.—The present spell of cold weather reminds one of that which prevailed at the beginning of October last year, when the house-martins suffered somewhat from the cold.

Martins were seen in fairly large numbers up to the end of September, and I think nested rather late. On October 5 a good many were flying about all day, more especially over the school playground and under the eaves of the shops overlooking the playground. Two or three took refuge in the buildings, no doubt in consequence of the keen north-west wind, and one or two of them in the school chapel. Several were picked up next morning quite dead (at least half a dozen) and one or two the next day, while the rest remained perched or crouched up under the projecting eaves on a bit of projecting masonry, until the sun's rays acquired sufficient warmth, apparently, to thaw their numbed bodies and encourage them to fly round under the shelter of the buildings. On the 9th there was a considerable rise in the temperature, and at least forty were seen, and fifty on the 10th. The majority then seem to have disappeared, only about half a dozen being seen on the succeeding days up to the 29th. Two, however, were seen on November 6, and one on November 7, this being the latest observed. I presume that the mortality of the martins was due to their late nesting, or perhaps to delay in migrating, as most of them seemed to be young ones.

A spotted flycatcher was seen on September 22, and a chiff-chaff was seen and heard for some days up to September 26.

Ramsgate. ROBIN STEVENS.

335. Summer Buzzer.—The "summer buzzer" mentioned by Mr. Gray in your February issue is probably *Rhizotrogus solstitialis*, Lin., known commonly as the "July bug," and locally, in Suffolk, as the "Witch." In Fowler's

"Coleoptera of the British Islands," it is said to occur chiefly in the southern counties and at Ely, the only more northern locality known to him being "Tynemouth Castle." It is, however, very common in parts of Suffolk, and in 1903 I found it in great quantities at Hunstanton, in Norfolk, where it came out in swarms at dusk, and caused much laughter, and some comical alarm, by getting its long tarsi entangled in the ladies' hair! The larva feeds on the roots of grass, and does much damage. Light attracts them, and they rarely enter a dark room.

16, *Belsize Grove, Hampstead,* ERNEST A. ELLIOTT.
February 8, 1906.

NATURAL HISTORY QUERIES.

71. Unknown Bird.—While walking along the Great North Road, about a mile from Barnet, last week I was struck by hearing the notes of an unknown bird. The "song" took the form of six or seven notes, uttered in a descending scale, almost giving the idea of a laugh. They were repeated several times, but I could not catch sight of the bird. I should imagine from the sound that it must have been a fairly large one. I shall be glad if any of your readers can tell what the bird was.

February 10. HERTFORDSHIRE.

SELBORNIANA.

THE CHEDDAR DISASTER.—Some time ago we protested against the ruination of a grand piece of scenery like the Cheddar gorge, by a large and unsightly stone quarry. Many public bodies expressed their sympathy with our protest; but nothing was done. On Sunday, February 4, after a period of somewhat heavy rainfall, the quarrying has had its result in the fall of a mass of the cliffs on that side of the gorge, variously estimated at from 70,000 to 500,000 tons. Perhaps something will now be done.

HINDHEAD.—Our readers will remember that, at the instance of the Commons and Footpaths Preservation Society, 730 acres of this most beautiful Surrey moorland were purchased last October for the very moderate price of £3,625, or less than £5 per acre. Only a little over £3,000 of this amount has as yet been subscribed, and in order to complete the purchase by December 31 it was necessary to borrow £1,000 for three months. In addition to the purchase money it is desirable to raise £100 or £200 as a nucleus of a maintenance fund; so that some £900 is urgently necessary before the end of this month. As already announced, the land is to be vested in the National Trust. Those who are not already familiar with the unrivalled charms of this lovely spot should, if possible, go to see it. The view, which by the courtesy of the Committee we are able to reproduce here, can give but a faint idea of the landscape; and we feel sure that all who do know Hindhead will be anxious to contribute something towards securing it as a national possession. Donations may be sent to Mr. Lawrence W. Chubb, Commons and Footpaths Preservation Society, 25, Victoria Street, Westminster.

HINDHEAD.
(By permission of the Hindhead Preservation Committee.)

Preservation of Swiss Scenery.—Steady progress has been made in the movement to secure the preservation of Swiss scenery since the Sion College meeting, which resulted in the establishment of an English branch of the Society working with that object. The number of members enrolled in this country is nearly 200, and they include many of the most distinguished members of the Alpine Club. The National Trust has passed a resolution of sympathy with the movement, and all the members of the City Swiss Club have joined it, as have also two well-known writers on the Alps, the Rev. H. B. George (of Oxford) and Dr. Claude Wilson, and the Headmasters of Berkhampstead, Birmingham, Clifton, and Dover Schools. The *Ligue pour la Conservation de la Suisse Pittoresque* will shortly publish the first number of its review, the object of which is to save as far as possible the natural beauties of Switzerland from the harmful influences of commercial enterprise.

A County Council Error.—The London County Council has done, and is doing, so much excellent work in various directions towards fostering the loving study of Nature that when they take an undoubtedly false step we know that they are sinning from thoughtlessness, and not from malice prepense. Nature-study and practical teaching of elementary botany in primary schools are excellent in themselves, and the setting aside of parts of the public parks as miniature botanical gardens is also an excellent means to these ends. Such gardens need not be limited to a small public display; but may well include provision for the cultivation of specimens for the schools, as the Royal Botanical Society long did for London medical schools in their Regent's Park gardens. The London County Council have plenty of available space and plenty of gardeners; and however pleasant a cycle ride at the ratepayers' expense may be, the business of a gardener is, after all, to grow plants and not to uproot wild ones. We were simply horrified at reading the following paragraph in the *Daily Express* of January 22.

Bicycles for Botanists.

The Education Committee, in their report to the London County Council, recommend that the Council's gardeners be each supplied with cycles, and that they receive an allowance of one penny for every mile they ride the machines.

The reason for this recommendation is thus explained: "We are informed that large numbers of botanical specimens are collected by the wayside, that the sources of supply are in most instances remote from the railway, and that by using cycles wherever possible the collection of specimens is facilitated."

Botanical specimens are being supplied to 575 departments of the County Council schools. On an average 700 boxes, containing 500,000 specimens, are despatched monthly.

Such journeys are not likely to extend very far from the metropolis, nor will the cyclists stray far from the roads, so that the half million specimens monthly mean the rapid destruction of most of the roadside beauty of a district where other causes are already at work towards uglification. We hope to

hear before our spring flowers appear that this policy has been entirely abandoned.

Wild Bird Protection.—We have received from the Home Office an Order, dated November 17, protecting the Great Bustard, the Goldfinch and the Little Owl in the county of Cambridge throughout the year and prohibiting the taking or destroying of eggs of any kind in Wicken Sedge Fen. We also received an Order, dated January 29, referring to the West Riding of Yorkshire, extending the close time from the last day of February to August 12, adding a great number of species to the schedule, and many others to the list of birds protected throughout the year, and prohibiting the taking of the eggs of many species after February 16, 1908, but excluding the House Sparrow from protection. On the same date an Order was issued for the East Riding fixing close time as from the last day of February to September 1, except as regards Mallard, Golden Plover, Snipe and Woodcock, for which it terminates on August 12, protecting numerous species and the eggs of many kinds throughout the entire year and area, prohibiting the killing or capture of all birds on Sundays in some districts, or on any date on the piers and shore at Bridlington, or between Flamborough South Landing and Skipsea Watch House, and protecting all eggs on Spurn Head and Hornsea Mere. Lastly, we have an Order, dated January 30, for Devonshire, extending the close time from January 31 to September 1, adding some species to the schedule and protecting certain species throughout the year and certain eggs throughout the county, protecting all eggs on Lundy Island, in the Baggy Point, Clovelly, Lynton, Slapton Ley and Start districts; but exempting the Shag and the Cormorant from protection in the Axe, Exe, Dart, Teign, Taw and Torridge Fishery Districts.

Publications of the Board of Agriculture and Fisheries.—We have received notice that this Board has printed in pamphlet form a description of the symptoms of cattle-plague, pleuro-pneumonia, foot-and-mouth disease, sheep-pox, sheep-scab, swine-fever, glanders, rabies, anthrax, epizootic lymphangitis and mange. We have also received their Leaflets No. 128, Advice to Beginners in Bee-keeping; No. 148, Planting Fruit-trees and Bushes, giving advice as to the selection of varieties; No. 152, Bacterial disease of Tomatoes; No. 154, Prevention and Cure of Foot-rot in Sheep; No. 155, Larch Canker (*Dasyscypha calycina*), previously known as *Peziza Wilkomii*; No. 156, Hedgerow Timber; and No. 159, Blindness in Barley and Oats. We may remind our readers that any of these publications can be obtained gratis and post-free on application to the Secretary to the Board, 4, Whitehall Place, S.W., and that letters of application need not be stamped.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

Objects of the Society.—To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) the skins and plumage of such birds as are not domesticated. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

Subscriptions.—The Council has great pleasure in acknowledging subscriptions of greater value than 5s. from the following members: The Rev. A. L. Hussey, £1 1s.; George Wheeler, Esq., £1 1s.; Charles Burt, Esq., 10s. 6d.; C. D. Davis, Esq., 10s. 6d.; Mrs. Davis, 10s. 6d.; Alfred Deed, Esq., 10s. 6d.; Mrs. Picton Turbervill, 10s. 6d.; Miss Brinkley, 10s.: E. A. Bristow, Esq., 10s.; Miss Broderick, 10s.; F. S. Clayton, Esq., 10s.; H. J. Evelegh, Esq., 10s.; Lady Fry, 10s.; Miss Gaskell, 10s.; Edwin S. King, Esq., 10s.; Mrs. Litchfield, 10s.; The Rev. F. M. Millard, 10s.; Mrs. Robinson, 10s.; Miss Shadwell, 10s; Lady Simeon, 10s.; Mrs. Wilkinson Smith, 10s.; Miss E. Stevenson, 10s.; T. Gore Timbrell, Esq., 10s.; Mrs. Turle, 10s.; J. H. Barber, Esq. (junr.), 7s. 6d.; Mrs. E. J. Paterson, 7s. 6d.; Miss Ranken, 7s. 6d.; Clifton H. Regnart, Esq., 7s. 6d.; Mrs. Congreve, 7s.; The North Middlesex Junior Branch, 6s.

New Members.—*Central Society.*—The following stand for election: Miss E. M. Coombs, H. W. Dickins, Esq., George W. Gibson, Esq., Herbert S. Jubb, Esq., F. Edell Mainland, Esq.

Birmingham Branch.—The Archdeacon of Birmingham; Miss M. Murray-Brown.

Hampstead Branch.—Miss Lilian Baker, Arthur Butcher, Esq., Mrs Jameson, Mrs. Masters.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings of Mondays, March 19 and May 21, for the purpose of issuing books to Members.

The Hon. Librarian has pleasure in announcing the following additions to the Library: "British Flowering Plants," by Lord Avebury, and "The Zoological Society of London," by Henry Scherren, kindly presented by the Editor; "Natural History of Selborne" (Miall and Fowler's edition, 1901), kindly presented by John Hopkinson, Esq.; and "Natural History of Selborne" (Jardine's edition, 1890), presented by the Librarian.

WINTER MEETINGS OF THE SOCIETY.

Saturday, January 20.—Between eighty and ninety members visited Fishmongers' Hall. To this large gathering were added several parties of members of other societies, so that the total attendance exceeded 200. The visitors were received by Mr. J. Wrench Towse, Clerk to the Fishmongers' Company, who read a paper of great interest and research, and afterwards acted as guide during the inspection which followed of the Company's large and handsome building. The Fishmongers' Company is of ancient origin, as we find it was fined so long ago as 1154 for trading without Royal licence. During the Middle Ages fish was such an important item in the national diet that Edward I. fixed a scale of prices, according to which threepence was to be charged for a dozen of the best soles, one penny each for mackerel in Lent, the same for twenty pickled herrings of prime quality, and twopence for twenty-five good eels. It is believed that both Edward I. and II. gave Charters to the Fishmongers, but the earliest document of the kind now existing is a patent granted by Edward III. in 1363, in which year the Company voted the King £40 towards carrying on the French war. There were also Charters by Henry VI. in 1433, by Henry VIII. in 1536, and by James I. in 1604. It is under the provisions of this last that the Company is

now governed and exercises jurisdiction over Billingsgate Market by its officers, called "Fishmeters," whose duty it is to seize and condemn unsound fish.

Many members of this Company have served the City as Lord Mayors, among whom may be noticed Sir William Walworth, who stabbed the Kentish rebel, Wat Tyler, at Smithfield, in 1383, and Sir Isaac Pennington, a staunch Puritan, who held office in 1642. This Pennington sat in both the Short and Long Parliaments, and as Lieutenant of the Tower conducted Laud to the scaffold. His son was the famous Quaker, whose stepdaughter married William Penn.

Displayed in a room on the first floor was the Fishmongers' magnificent plate, many choice pieces of which date from the seventeenth century. The Company's pictures are particularly fine, and include two Romneys. There were also shown an interesting old funeral pall, and a chair made out of the piles of old London Bridge.

The Hall of the Company has suffered the usual vicissitudes of these unfortunate buildings and was destroyed in the Great Fire, and the edifice which replaced it had to be pulled down to make room for the present London Bridge, so that the existing building only dates from the thirties of the last century.

With the usual hospitality of this Company tea was served in the great Hall for the numerous visitors; and the proceedings terminated with votes of thanks to the Master and Wardens, and to Mr. Towse for his valuable paper and services.

NEWS FROM THE BRANCHES AND AFFILIATED SOCIETIES.

Birmingham and Midland.—The Annual Meeting was held on January 30. The Archdeacon of Birmingham presided. The Hon. Secretary read the Committee's Report, in which it was stated that several lectures had been given during the year, and many hundreds of leaflets distributed. There had been a slight addition to the membership. The financial statement showed a balance of £7 5s. 1d., which was considered very satisfactory, when the expenses of the lectures were taken into account.

A lecture was given in the Town Hall, Birmingham, on February 6, by Professor W. B. Bottomley, M.A., F.L.S., entitled, "Some Shifts for a Living amongst Animals." The lecture dealt with the question of "Colour Protection," and also "Mimicry," and was illustrated by a series of lantern slides; it was listened to with great interest by the large audience, consisting chiefly of members of the Early Morning Adult Schools, and at the close a hearty vote of thanks was accorded to Professor Bottomley, which was carried by acclamation.

Hampstead.—The Committee of the Hampstead Branch has pleasure in acknowledging subscriptions of greater value than 5s. from the following members: Arthur T. Cummings, Esq., £1 1s.; H. Wilkins, Esq.. 10s.; Mrs. Wilkins, 10s.

North Wilts Field and Camera Club.—The Annual Conversazione of the North Wilts Field and Camera Club was held on January 27, 1906. The evening was marked by a very pleasant incident, the presentation to the Honorary Secretary, Mr. T. C. Davison, of an oak roll-top writing desk, as a slight recognition on the part of the members of the Club of the valuable services rendered by him since the formation of the Club, eight years ago.

Mr. G. Avenell, Vice-President, in making the presentation, spoke in the warmest terms of Mr. Davison's enthusiastic work. In acknowledging the gift, Mr. Davison thanked the members for the ready response he had always received from them, which had lightened his labours and tended to the success of the Club.

FORTHCOMING EVENTS.

Winter Meetings of the Society.

Saturday, March 3.—Visit to an Ivory, Mother-of-Pearl and Tortoiseshell Warehouse. Meet at Mr. M. Myers' Warehouse, 1, George Street, Tower Hill (close to Mark Lane Station), at 2.30 p.m.

Saturday, March 17.—Visit to Ironmongers' Hall, Fenchurch Street, E.C. Assemble punctually at 3 p.m. Guide, Edward H. Nicholl, Esq., Hon. Librarian to the Ironmongers' Company.

N.B.—Members are requested to abstain from bringing friends on this occasion.

Saturday, March 24.—Visit to the Horniman Museum, Forest Hill. Meet at the Museum at 3 p.m. Trains leave London Bridge 2.15 and 2.28 p.m., Victoria 1.52 and 2.12 p.m. (L.B. & S.C.Ry.). Guide, Dr. Harrison.

N.B.—There will be a lecture in the Museum on "Dolls of the World."

Saturday, April 7.—Visit either to the Gardens of Sion House, or to the Royal Gardens, Kew, under the guidance of Professor Boulger. Particulars will appear in the April number of the Magazine.

All communications with regard to the Winter Meetings of the Society should be addressed to Mr. H. H. Poole, *Honorary Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

COUNCIL AND COMMITTEE MEETINGS.

Monday, March 19.—Publications Committee, at 5.30 p.m.

Tuesday, March 27.—Council Meeting, at 5.30 p.m.

ANNUAL CONVERSAZIONE.

It is hoped that the Annual Conversazione will be held towards the end of May. Tickets will be sent to all members on the Central Body, but those attached to Branches must apply to their Local Honorary Secretary as soon as the exact date is announced.

Offers of exhibits and help in the arrangement of them would be welcomed by the Conversazione Committee, and should be addressed to the Hon. Secretary, at 20, *Hanover Square, W.*

ANSWERS TO CORRESPONDENTS.

M. J. Teesdale.—The orchid from Jamaica is *Epidendrum polybulbon*, Swartz.

S. J. T.—The information you require is very scattered; but you will find references to various works in the bibliography in vol. iv. of Mr. W. F. Kirby's "Lepidoptera" in Allen's Naturalist's Library. The same author's "Elementary Text-book of Entomology" (Sonnenschein), though general, may prove useful to you. Schatz and Staudinger's "Exotische Schmetterlinge," the former dealing with genera and having 36 uncoloured plates, and the latter coloured and treating of species, are perhaps the fullest works for the butterflies. They can be obtained for less than £10. Distant's "Rhopalocera Malayana" (1882-6), with 44 coloured plates, £5, is now scarce; Horsfield's "Butterflies of Java" (1828-9), in two 4to parts, was never completed; and Swinhoe's "Eastern Lepidoptera" might be useful. Sir G. Hampson's British Museum Catalogues deal with the families of Lepidoptera *seriatim*, each volume of text being about 15s., and that of plates £1; and Mr. Kirby's "Catalogue of Sphingidæ and Bombyces" (£2 2s.) is only a list of names with synonymy and geographical distribution, but would be essential to thorough work at the moths.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 196. APRIL, 1906. Vol. XVII.

TO A THRUSH ON A MID-MARCH MORNING.

When inconsolable the wild March wind
Mourns thro' the dusk, and therewithal the rain
Beats a loud tambour on my window-pane
With melancholy music, then my mind
Sure solace in a single voice can find,
My voice of triumph that no winds restrain
Nor tears from out of Heaven can make in vain,
Voice of the Spring with daffodils behind
And daisies soon to follow calm and clear.
For all the gusty turbulence of March,
For all the rush of intermittent showers,
Comes with thy song new hope of leafy bowers,
New sight of rubies in the yellowing larch,
And at thy call all love-tides reappear.

H. D. Rawnsley.

A SEA-SHORE IN BRITISH GUIANA.

IT is a broiling hot day in April, and as I sit in the verandah, or "gallery" as it is usually called in Guiana, I look over a series of parched fields in which the grass has turned brown and the earth is a network of cracks several inches deep; and, in spite of the reputation of the Corentyn coast for breezes, there is no air stirring. Let us go down to the sea-shore and see if we can find a breeze there.

The high road which leads from New Amsterdam up to Plantation Sheldon on the Corentyn River is at no point very distant from the sea-shore: a trench, which receives the drainage of the land, runs alongside the road, and at intervals there are cross-trenches, spanned by wooden bridges, which carry the surplus water into the sea. We will follow one of these cross-trenches to the sea-shore.

The tide is coming in, but will not be at the full for another two hours, and the mud at the margin of the trench is not yet covered with water. Numbers of small crabs belonging to the genus *Gelasimus* are scuttling over the surface of the mud, most of them having the right claw as large as the rest of the body and the corresponding claw on the other side very small. Some as they run wave their large claws about as though beckoning one another, whence comes their popular name of "calling crabs"; but others are sweeping the surface of the mud with them, probably in search of food—at any rate the little claw is very active after each sweep.

The path we are walking along has been raised by the earth thrown up in digging the trench, which is on our right, the low land on our left is flooded every spring tide, which seems to favour the growth of that vivid green shrubby plant, which covers the low land as thickly as a moor is covered with heather; for it grows no farther than the extreme limit of high water, and much of it is washed by the sea whenever the tide is in. Its thick fleshy leaves of a light green colour, changing here and there to golden yellow, remind one of samphire, but it bears a sort of fleshy catkin by way of flower, and has a salt flavour and a strong, somewhat unpleasant smell. This "crab grass," as the negroes call it, covers many miles of the coast and gives a characteristic colour to the scenery.

On the right-hand side of the path we pass some spiny mimosa trees about 8 feet in height, which resemble hawthorn trees in general appearance. The closely set yellow balls of flowers have the same sweet scent as the common European mimosa, but are about an inch in diameter and grow singly. Look yonder, on the other side of the trench there is another kind of crab, a handsome fellow, too, with a purple shell and scarlet claws, in the mouth of a hole at the root of that courida tree! A little farther on the footprints of a crab dog in the mud at the edge of the trench catch our eyes. Crab-dogs (*Canis cancrivorus*) are strongly disliked by the sugar-planter, for although they are said to eat rats, they certainly destroy a great deal of cane. They bite the canes near the root and chew four or five inches of the stem, so that the cane falls over on one side and usually dies. On following up the track we come to a stretch of mud covered with their footprints; evidently they have been searching for food here, probably crabs, or perhaps some of these fish we see swimming in the trench to our right with half their heads out of the water. We throw a stick at them and they skip right out of the water, and on touching the water again give another skip, and another, and another, much in the same way as a flat stone does when a schoolboy is playing ducks and drakes. Should a hop bring one of them on to the mud, it is not in the least disconcerted, but skips back again, seeming to be as much at its ease on the mud as it is in the water. A negro with a double-peaked beard is coming towards us with a casting-net hanging over his

shoulder, and we ask him the name of this strange fish. "Four-eyes, baas," he replies; "he got two eye to see in de air with, and two eye to see in de water." This, then, is the reason of its swimming with half its head above the surface. The eyes are in reality two, not four, in number; but each eye is divided into two parts, the upper half of the lens not being so globular as the lower half, so that it well deserves its popular name, as well as its scientific name of *Anableps tetrophthalmus*.

By this time we have reached the thick band of courida trees which skirts the shore. Many pools of water have been left among the samphire-like crab-grass and hundreds of coast birds are flying about them. Yonder is a flight of small snipe-like birds called knits (possibly a corruption of the English "knot"), consisting of about a hundred individuals, and beyond them on the higher ground by that button-wood tree, which reminds us of the English alders, are a few "long-legs," which are larger birds of the same type—and all around, flying over the crab-grass and flitting through courida and button-wood trees, are numbers of butterflies resembling the "large white" of English gardens.

We have now reached the shore itself. Nothing more unlike a typical British sea-shore can well be imagined. The sea as far as the eye can reach is a dirty yellow, and where there is any sand at all it is mixed with mud. This mud is fairly hard and it is further consolidated by the far-spreading roots of the courida (*Avicennia nitida*), and by an immense number of shoots about the thickness of a lead pencil which springing from the same roots reach the surface of the mud but appear never to bear leaves or grow into new trees. These shoots make walking possible even when the mud is moderately soft. Beyond the roots a narrow strip of rounded lumps of clay forms an apology for shingle; for there is not a pebble to be found throughout the front lands of Guiana: a few gasteropod shells are lying on a strip of muddy sand; and further out the mud stretches away to the incoming sea.

The tide is not yet in, and large numbers of slate-grey, white, and piebald gaulins (herons) are scattered over the shore, and a so-called "blue crane," a giant by comparison, is standing like a sentinel by the side of a tree-stump. A large number of these stumps are standing for about three hundred yards out to seawards, and probably the advancing tide has already covered many others. The sea is rapidly eating away the coast at this spot. Yonder you can see a dozen courida trees which, in spite of the resistance their matted roots present to the waves, are being gradually cut off from the land. Far away in the distance are three fishing boats, and nearer in a few nets, fixed to stakes, are being covered by the advancing tide.

We now turn back and walk through the courida trees towards the road. After we have gone a few hundred yards we take a path to the left which crosses the trench and runs parallel to the sea. This path is, in fact, a dam which keeps the sea out

of what was, many years ago, a cotton plantation, a number of parallel ditches, once used for draining the land, still testifying to its former cultivation. On the left the crab-grass stretches down to the sea-shore, giving place in one spot to a large shallow pool of sea-water surrounded by courida trees. In this pool there are about a dozen roseate spoonbills (*Phatalea ajaja*), which take fright as we approach and fly further away to the edge of the sea. Next a pair of vicissi duck (*Dendrocygna viduata*) rise from the crab-grass and settle on some trees away to our right—for the vicissi, unlike most ducks, perches on trees—and soon after a "crookbill" (curlew) crosses our path.

Every few yards we disturb a moth—a pyralid—from the crab-grass which has almost overgrown the narrow path on the top of the dam, and by watching where it settles and walking slowly and carefully towards the place we find it to be a most lovely moth about 1½ inches in expanse, pale green with a silky gloss, the front of the upper wing bordered with chocolate. At the end of five or six hundred yards we turn to the right and walk along one of the side dams of the old estate towards the road. Presently we come to sandy soil, and the crab-grass gives place to guelder-rose-like shrubs and further on to pasture land where a few goats and cows are getting a scanty living from the parched grass: half a mile away there are some wattle-and-daub cottages surrounded by small gardens, shaded by mango-trees and cocoanut palms, in which the coolie villagers raise what vegetables they require; and, passing these, we regain the road just as the afternoon mail-waggon drawn by four mules passes on its way to New Amsterdam.

C. Paton.

AN OLD DUCK DECOY.

FOUR or five years ago an article of mine, called "A Norfolk Rectory," appeared in your pages. Since then the friend of whom I wrote has moved to another sphere of work and I have taken his place. The change suits us both, for he has larger scope for his energies and talents, while I am in a naturalist's paradise. Below my house, some 200 yards off, there is a duck decoy that has fallen into disuse. It is a quiet, sheltered spot, and many a creature, not to be found everywhere, is to be seen there that delight the observer's eyes. Immediately beyond the decoy, and separated from it by a mound 10 or 12 feet high, is the River Nar, the home of the gadwall, where resides many a lusty trout, and in whose well-preserved waters I am at liberty to throw a fly whenever the spirit moves me. Here the dry-fly fisherman alone can hope for sport, for the trout are by no means unsophisticated, and he who would be successful in this difficult stream must be

accustomed to the work. Rabbits have honeycombed the mound and pay unwelcome visits to my cabbage bed, in spite of constant attention to the wire netting round the garden. There are larger and far more interesting animals than rabbits that make the decoy their home, and long may they live there in security and peace. Suspecting their presence, I spent an afternoon in search for otters. My attention was first drawn to a damp spot, where the vegetation was trampled down about four yards square. Here the otters are in the habit of carrying their prey. Quantities of feathers, principally of moorhens, were trodden into the soft ground, but no remains of fish, or fur, or bones of water-rats could be discovered. Announcements of the slaughter of otters with the gun, or the cruel iron trap, are frequently made with a flourish of trumpets in the public press, and syndicates of fishing clubs read the news with joy. All the time we naturalists lament the persecution of a beautiful animal whose haunts are becoming fewer year by year. We question whether the otter's character is half so black as the votaries of the rod are apt to paint it, and we beg them to stay their hand. The very day I discovered the whereabouts of otters I saw, disporting themselves in the river in a spot the size of my dining-room table, half-a-dozen large trout not twenty yards from where the moorhens had been eaten. Otters prefer eels to any other kind of fish, and turn over stones in the water in search of them. Need I say that eels are enemies to almost all other fish? I have already pleaded for the otter in my "Enemies of Trout"; will no other pen be his champion in NATURE NOTES? Having found where the otters fed, I set out in search of where they lived, and after examining some likely looking earths, hit upon an unobtrusive hole close to the water's edge. This is their "holt," and is evidently much used, the ground immediately round it being well trampled and beautifully clean. A few yards farther on there is a large dead willow-tree that has fallen down, the stump, some 4 feet high, remaining upright in the ground. Here the otters often spend their time and repose in peace and safety. There are numbers of squirrels in the trees that shelter the decoy, far too many for my liking, as they persecute the little birds and rob their nests. But they are attractive little animals, and part and parcel of spots like this. I wish they would not be quite so severe on my nuts and fruit; but they will do it.

As may be supposed, a great variety of birds take up their abode in the decoy. Owls live unmolested in the trees and are to be heard hooting at intervals almost every day, to say nothing of the night. Here, and in the grand ruins of the monastery at Castleacre, close by, they have splendid shelter. Herons are often to be seen standing in the still water, where they are more welcome than in the river. There are too many of them; but this is merely a pious opinion out of love for the trout, and I do not interfere. Ducks of different kinds—principally mallard, teal and gadwall—often drop in, and if any of us appear in the

meadow below the garden wall, take flight; for till the water plants are grown this part of the decoy is much exposed. Coots and moorhens, of course, abound, and scuttle off to cover when an enemy is in sight. The most interesting bird, at all events to me, that lives here is the green sandpiper. Some way out in the decoy lie the trunks and branches of fallen trees, just emerging from the water. On these five or six of these noisy birds spend the greater portion of the day for months in the year, and cry cake at the sight of man. They remain till the middle of May, then they disappear for a few weeks, and turn up again with the young birds. It would be a great find to light upon their nest, for whether they breed or not in Britain is by no means certain. Their movements a little later on will be noted day by day. The lesser redpoll breeds here in considerable numbers, and is at home among the alders. Three kinds of woodpeckers are to be seen, but unfortunately I have left behind me at Easton and Riddlesworth their great black cousin, thirty miles off; though perhaps, if he prospers, he may take a fancy to our pine-woods here. There are many kingfishers: may their numbers never decrease.

Of insects I can at present say but little. I suspect the presence of the Emperor butterfly, and hope to make his acquaintance by-and-by. It is also the sort of country where the Swallow-tail might turn up. From the abundance of their food plants the Elephant Hawk-moth and *Sphinx galii* ought to be found, and it may be my lot to come across that great rarity, *Sphinx pinastri*, which of late years has been taken at rest on the trunks of firs in some parts of East Anglia.

Sometimes the water of the decoy is covered by a growth of a beautiful blood-red colour, the nature of which at present I do not know.

But after all, the most interesting animal is man; and when he comes across rare specimens of the genus *Homo* the naturalist is in duty bound to chronicle their occurrence. The farmer who occupies the land close to the decoy is a rare good sort, and delights my naturalistic heart. He does not look on all birds as his natural enemies. Rooks, owls and kestrels he considers friends; most little birds he welcomes, but he draws the line at sparrows, and in this grain district, so do I. We have far too many. Rabbits are to him as vermin, and he entreats me to keep my rabbits down. He gives a penny to his men for every rat they kill. Stoats and weasels he encourages and dares his men to touch them. His ricks are being threshed. In one of them there were legions of rats, and forty-seven were killed by the men. Another close by was tenanted by a weasel: there was not a rat in it, but there were about thirty mice found freshly killed, "all in a lump." The weasel is alive to save another rick.

The gamekeeper on this beat is almost unique. He does not look upon me as a cracky theorist, or say, as most keepers

are apt to, that having been bred amongst birds and game he ought to know best. He does not kill owls, and pointed out to me where an otter had been, which he promised not to slay. But he has bloodthirsty designs on a kestrel, often to be seen hovering over the decoy, presumably in quest of young water-rats or some such small deer. This bird belongs to the church tower and breeds there; and the key belongs to me. There is not very much to complain of in a keeper whose education goes as far as this. When he gets a little higher in the class he will spare the life of that useful hawk, the kestrel.

EDMUND THOS. DAUBENY.

Southacre, Swaffham, Norfolk.

NATURE STUDY IN THE EAST END.

BY AMY ASTBURY.

TO see Nature Study in its true sense carried on under the most successful conditions possible, one should visit the Nature Study Branch of the Stepney Borough Museum, where the exhibits are by no means confined to *dead* creatures. The collection of living animals flourishes in the building which was once the public mortuary of St. George-in-the-East. Until recently it was locally known as the "dead 'ouse," but it is gratifying to learn that this name is no longer applied. It was opened for its present purpose in June, 1904. The building stands in the south-east corner of St. George's Recreation Ground—once the churchyard. Along its north wall runs a wide border, where seventy children from a neighbouring Council School spend one day a week gardening, under the directions of Miss Hall, the Curator. The work of organising the efforts of seventy small and enthusiastic gardeners, in a comparatively small piece of ground, is no easy task. At present the most exciting result is the coming up of the crocuses. Inside, the Museum is devoted entirely to living animals. The salt-water aquaria were specially interesting. Anemones, star-fish, sea-urchins, cup corals, limpets, periwinkles, &c., were in capital condition. Indeed, it would be difficult to imagine them more beautiful, even in their most favourable natural surroundings. The anemones were particularly delightful, the shades of the various species forming quite a feast of colour. There were several colonies of young in one tank. All the tanks are aerated by means of an electric pump.

A fine specimen of a salamander, an Italian toad, which enjoyed being taken out of the cage and petted, and a beautiful lizard which crawled affectionately over the Curator's arm, were perhaps the most interesting of all. The fresh-water tanks

contained crayfish, water spiders, caddis-worms (each with its tiny house resembling a Swiss cottage), with scorpions, river lampreys, and many other interesting exhibits. The fish included carp, roach, perch, pike and sticklebacks, all looking very happy and satisfied with their surroundings. In summer, bees may be watched in an observatory hive, and specimens of honey, made last year, were on view.

Teachers in the Borough are invited to take their classes for demonstration lessons, and the museum is closed to the public whenever the collection is required for this purpose. It is almost impossible to realise what intense pleasure this fascinating collection must give to the children of Whitechapel. Several typical little East-Enders were going the round of the Museum, gazing lovingly and reverently at the various exhibits. The only dead specimen here was a stuffed mole, found just outside in the Recreation Ground. It was kept alive for some time, but eventually met with an accident and died. Nature Study exhibits, not alive, are in the Borough Museum, 77, Whitechapel High Street. The donor of the collection, which formed the basis of the Museum, was the Rev. Daniel Greatorex, formerly Vicar of St. Paul's, Dock Street. The wall-cases, going entirely round the room, contained animals beginning with Protozoa and ending with a human skeleton. One of the most striking bird exhibits was a case of darters from New South Wales, flying, standing, and one diving under water, with a fish in his beak. Among the rodents was one with an incisor which had grown to an abnormal length and curled round, owing to the corresponding lower tooth having been injured or lost. Some of the centre cases contained specimens of trees—winter and summer branches, flowers, fruit, specimens of wood, and photographs of the trees in winter and summer.

There was a large collection of growing twigs in water, poplar, willow, oak, lilac, and many others. Among insect life-histories were noticed the grasshopper, ladybird, lace-wing, dragon-fly, tortoise-shell, red admiral, ermine, and many others. Another interesting case showed the structure of feathers. A clever model of two barbs of a wing feather showed how the barbs interlock and so possess the power of resistance necessary for the wing feathers. There was one small tank containing minnows, which was aerated in a very simple but effectual way. The tank was connected with an ordinary two-pound jam jar, by means of two lengths of glass tubing placed immediately over each other with an air space between. The water trickled through the tubes from the jar into the tank, becoming aerated as it passed through the open space.

Much more might be written did space permit, but this brief outline of a very enjoyable visit may interest Nature-lovers who do not already know the Stepney Museum.

LETTER TO THE EDITOR.

Gowbarrow Fall and Aira Force.

Dear Sir,—The National Trust have raised £12,000 for the purchase of Gowbarrow Fall and Aira Force. Since the money was raised the Trust have been able to arrange with the owner of the property for possession of a field of 22 acres west of Aira Beck, and to enable them to obtain full power over the whole Aira Vale, they are anxious to secure a magnificent meadow of 32 acres, which slopes from the Fall down to the shore of Ullswater. They have the option to purchase this at £864, of which £200 has been promised, and I have had a conditional offer of £100 if I can raise five other gifts of like amount, or of £50 if I can raise eleven others of £50. I am naturally anxious to see the crown thus set upon our labours, but I know not how to get the offer before the public unless you can help me.

Yours truly,

Crosthwaite, Keswick. H. D. Rawnsley.

I am confident that any one who visits Gowbarrow will see that the addition of the 32-acre meadow will enhance the value of the whole purchase.

REVIEWS AND EXCHANGES.

The British Woodlice. By Wilfred Mark Webb, F.L.S., and Charles Sillem. With 25 Plates and 59 Figures in the Text. Duckworth and Co. Price 6s. net.

The Society gains a reflected lustre from the issue of so thorough and so useful a piece of work as this monograph by our Honorary Secretary and another. We have previously made brief reference to it as it appeared in instalments in the *Essex Naturalist;* but doubtless in an independent volume form it will appeal to a wider public. To some people the terrestrial *Isopoda*, or Woodlice, may not appear a very interesting group; but it is the monographing of these less attractive groups that is of the greatest service to the advancement of science. A brief but well-illustrated Introduction describes the systematic position, geological history, anatomy, embryology, and habits of woodlice, while their local names and the methods of collecting and preserving them are also dealt with. The four families, with the twelve genera and twenty-five British species as yet known are then described, with their synonymy and distribution, both British, or rather Britannic, and foreign, and a full bibliography and index are added. Mr. Charles Sillem's twenty-five plates, representing all the species and drawn from life, are excellent, and have been beautifully reproduced by F. W. Reader. The actual length of each species in millimetres is stated on the plates; but we do not think this should do away with the system of adding an engraved line showing the true length by the side of the magnified image. Printers and publishers have contributed to the attractiveness of the volume, and it should have the effect of extending the study of this group of animals and so adding to our meagre knowledge of their distribution.

From Palæolith to Motor Car; or Heacham Tales. By Harry Lowerison, A. J. Whiten. Price 3s. 6d. net.

We always expect something fresh and original from Mr. Lowerison, and here we certainly have what we expect. It is an excellent notion to impress the general sequence of social and national history by a chronological series of tales

dealing with one locality and incorporating local place-names and local archæology from flint implements and bronze palstaves to Norman castle, "Perpendicular" church-window and Tudor gatehouse. Mr. Lowerison's fourteen stories

THE GRAND ENTRANCE, CASTLE RISING.
(From a drawing by Walter Dexter, R.B.A., for Harry Lowerison's "Heacham Tales.")

are short enough and "sensational" enough to rivet any boy's attention, and if the adult reader does detect the loving pedantry of the antiquary, was it not also obvious enough in Sir Walter himself? We quite admit that it is inconsistent with truth to permit the young to view all life through roseate spectacles; but

at the same time we regret that Mr. Lowerison feels it his duty to emphasise so continuously the brutal and the selfish side of history. The pictures of implements and local views, one of which we are permitted to reproduce, add to the attractiveness of the volume, whilst the notes, though brief, give it a scientific character.

Darwinism and the Problems of Life. By Conrad Guenther, Ph.D., Professor at the University of Freiburg. Translated from the third edition by Joseph McCabe. A. Owen and Co. Price 12s. 6d. net.

We are not sure that we agree with the translator of this work in thinking that "the quantity of popular evolutionary literature in our tongue is so slight that a fresh work of acknowledged competence should be assured of a welcome." Doubtless there are many people anxious to receive a dogmatic summary of the results, or alleged results, of modern science, and then to talk glibly about them, without the drudgery of any training in observation which might make them capable of appreciating the weight of any of the evidence upon which those results are based. We shall always insist on the primary importance of such observational discipline as a pre-requisite to any opinions that are to be thought worth a hearing. There may, however, be room for two expositions of the modern post-Darwinian theories of evolution, one elementary and explanatory for the tyro, or that unsatisfactory person, "the general reader," the other comprehensive and argumentative, with adequate *pièces justificatives* and bibliographical references for the more advanced student. We cannot help thinking that Professor Guenther has fallen between these two stools. His point of view is that of Darwin as modified by Weismann, with none of the "heresy" of the Neo-Lamarckian, and "no knowledge of science is presupposed." Whilst commendably light to hold, the volume is printed on such thick paper that, though over two inches thick, it contains little more 400 pages. Not a few of these are wasted in "fine writing"; and, though eight out of the twelve chapters are named from the larger divisions of the animal kingdom, there is not space enough for any detailed exposition of the evolution of these groups, as the various side issues of the theory are desultorily discussed as they are suggested by one or other class of animals. Thus colour and play are treated under Mammalia; sexual selection under birds; geological succession, the power to re-form lost members, and warning colours under reptiles; rudimentary organs under fishes; mimicry, instinct, and the inheritance of acquired characters, under insects. It is difficult, for this reason, for the student to get a good general view of the theory: the work would, in fact, have been the better for such summaries as those with which Darwin habitually closed his chapters. We are grateful to the author for his defence of the kingfisher. "What does it really matter," he says, "if the kingfisher does destroy a few fishes a day—and generally fishes that are no use to us! He makes up for that by his beautiful appearance. How sad it would be if we were to lose for ever the unforgetable moments that come to the solitary dreamer by the stream when he catches sight of this bird with its plumage of jewels!" On the other hand, we trust that the following is not his notion of logical reasoning: "The theory of evolution was formulated before Darwin; the theory of selection was created by him. But the theory of evolution itself owed its great advance to Darwin's book, chiefly because he provided the explanatory hypothesis of selection. Hence it is not improper to include both theories under the title 'Darwinism.'" With this fundamental *non-sequitur*, the work also suffers at the hands of a translator who appears to have no acquaintance with the subject at first hand. We read, for instance, of "the chirp of the wood-pigeon," "the processionary butterfly," the "comb" on the breast-bone of carinate birds, "crabs" in the Silurian, "the ringed adder," and the "tortoise" feeding upon frogs, and of the "strepsitera"! We are glad that plants are but slightly touched upon, as our brain could not stand much more like this: "The 'plant egg,' which is found also in flowers, but only in small quantities, is in this case enclosed in a capsule that is called the 'seed-bud' or germ, and is drawn out in a long stalk called the 'pistil' above." But, in the absence of scientific names, or even capital letters, what will the zoological tyro make of the following passage, or indeed of the whole of p. 175? "With this [ovum] it [the fish] swims to one of the larger painter's

gapers, which stretch out their respiratory and cloaca-opening sluggishly from the sand."

Nature's Story of the Year. By Charles A. Witchell. T. Fisher Unwin. Price 2s.

We are glad to see this cheaper reissue of a work which we commended on its first publication.

Salads. By Horace J. Wright. Agricultural and Horticultural Association. Price 1d.

The notion that English people are incapable of making a salad is borne out by the fact that many of us speak of lettuce as synonymous with salad. The Agricultural and Horticultural Association now issue a shilling collection of the seeds of twelve different salad plants. With these and Mr. Wright's simple instructions as to their cultivation this reproach upon our domestic economy ought soon to be removed.

Bulletin of the New York Botanical Garden, vol. v., No. 15.

This number is made up exclusively of official business reports and a list of members.

Bulletin of the United States National Museum, No. 51.

This is a list of the publications of the Museum, from 1875 to 1900 inclusive.

The Nature-Study Review, vol. ii., No. 1., besides an illustrated article on the evergreen trees of the United States, has several other admirable papers.

Bird-Lore for January and February has two excellent coloured plates, one of Warblers, the other of the Cardinal Grosbeak or Virginian Nightingale, male and female—the former not only a brilliantly coloured bird but a most melodious songster—all the birds being represented half their natural size.

Knowledge for March contains several papers of interest ; one, for instance, on rare living animals in London by Dr. Sclater, dealing with *Ceratodus ;* one by Mr. E. A. Martin on coast denudation, and another by Mr. J. Russell Larkby on the eolithic controversy. There are also the usual valuable series of notes ; those on botany edited by Mr. Massee, the geological ones by Mr. Martin, the ornithological by Mr. Pycraft, and other zoological ones by Mr. Lydekker.

Received : *The Plant World* for January ; *The American Botanist* for January and February ; *Our Animal Friends* and *The Victorian Naturalist* for February ; and *The Naturalist* (Special Spring Number, price 1s. net), *The Irish Naturalist*, *The Animals' Friend*, *The Animal World*, *The Humanitarian*, *The Parents' Review*, *The Agricultural Economist*, and *The Estate Magazine* for March.

NATURAL HISTORY NOTES.

336. Rooks and Recollections.—The Rooks at the Tower were unquestionably Rooks and not Jackdaws, as might be supposed. I have a most perfect recollection of them, and everybody called them Rooks and knew them to be Rooks ; they were called Royal Rooks, because they built in the crowns. Their nests were perfectly visible. I saw them there in the year 1837, and I think for two or three years afterwards. I passed them four times every day on my way to and from the City of London School in Cheapside. There was a daytime thoroughfare through the Tower Wharf. It was stopped during the Crimean War and for some years afterwards, but has been again reopened. Although it seems a very singular case, there is no doubt that they were Rooks.

They were often flying near me. No one can make a mistake between a Rook and a Jackdaw, which is a much smaller bird.

Hampstead, March 8, 1906. PETER HASTIE.

337. Redwings.—On February 23 I heard a "charm" of about forty Redwings for the third time this winter. The tone was lower and sweeter than in the Starling's "charm."

Haselbeech Rectory, Northampton. W. A. SHAW.

338. Unknown Bird.—The bird whose identity was a puzzle to your correspondent "Hertfordshire," was doubtless the Green Woodpecker (*Gecinus viridis*), a familiar and handsome species. Its laugh-like cry is frequently to be heard in woody places at most seasons of the year. In this part of Berkshire the bird is of common occurrence.

Fyfield, near Abingdon. W. H. WARNER.

339. Replying to Natural History Query, No. 71—Unknown Bird—in March issue, I have no hesitation in identifying the bird whose laughter-like notes attracted the ear of "Hertfordshire," as the Green Woodpecker. This bird—together with the Lesser Spotted and the Great Spotted—all nest in our Hertfordshire woodlands, but the green species alone utters the curious laughter-like notes.

March 13, 1906. W. PERCIVAL WESTELL.

340. Green Woodpeckers.—There seems to be various opinions as to the food of these birds and the way they seek it. Some suppose their food consists principally of insects dug by their powerful bill out of the bark and substance of trees, and that they are great enemies of wood-boring insects, and especially of the Goat Moth (*cossus ligniperda*), whose caterpillar tunnels in the very heart of forest trees. Authority may be produced in support of the idea that they feed on nuts and acorns; and it is believed by many that they insert their long tongues into crevices of the bark of trees in search of insect prey. I venture to think that they are ground feeders, and that their food consists almost exclusively of ants. The flight and development of wing being feeble they are always found in the proximity of trees, to which they go for refuge on the appearance of an enemy. It is on the ground near trees that they feed, and on the ground courtship takes place. These birds frequent the trees round my house, and afford me many opportunities of watching their operations at close quarters. On examining the spot where they have been at work on my lawn, holes of a trumpet shape are to be seen in and round the nests of ants. They drive the bill up to the eyes in the earth, going round and round the hole in so doing, and widening it by moving their head from side to side, and as the ants emerge they catch them with their viscid tongues. An examination of the stomach shows that their food consists of ants and practically nothing else. The love-call of Greater and Lesser Spotted Woodpeckers, caused by such rapid strokes of the bill upon a tree as almost to amount to a musical note, can be heard on a still spring day at the distance of half a mile or more, and the sound of the tappings of a Tit on a branch travels a considerable distance. When Green Woodpeckers are constructing their nests the noise of boring can, of course, be heard; but at other times it is their laughing cry, and not the stroke of their powerful bill, that gives notice of their presence, They are not to be seen going up and down trees like Creepers or Nuthatches in search of food. It is well known that they suffer severely in prolonged frosts when the hardness of the ground cuts off the supply of ants.

Southacre Swaffham, EDMUND THOS. DAUBENY.
March, 1906.

341. Bittern.—One of these birds has for some weeks past frequented the lake at Narford, where, as far as human foes are concerned, every precaution was taken to preserve its life. Its remains, however, have just been found by the keepers at the shore of the lake, where it had fallen victim to a fox. Narford is

an asylum for rare creatures, and I had hoped this bird would have found a mate and reared some young. Some prowling beast of prey has upset it all.

March, 1906. EDMUND THOS. DAUBENY.

342. Elder.—I have come across a curious growth on an Elder tree. Six feet from the ground a small branch, the thickness of a finger, bends downwards two feet, and then turns upwards. From a single spot in this turn eighteen shoots rise perpendicularly in a bunch, many being from two to three feet long and thicker than the bunch that bears them. Contact with the ground at the bend is impossible.

March, 1906. EDMUND THOS. DAUBENY.

NATURAL HISTORY QUERIES.

72. Goldfinches in London.—While dressing at my window the other morning, I saw three Goldfinches sitting on the tree just opposite. I watched them for some minutes, and saw them fly over to a piece of spare ground close by and feed on some decayed thistle tops, which, I think, is food for the Goldfinch. Is it not a very uncommon thing to see Goldfinches in the streets of London?

37, *Iverna Gardens, Kensington, W.*, F. MACKENZIE.
March 1, 1906.

73. Guardian Birds.—On page 191 of vol. xv., attention was drawn in these notes to an article having reference to the habit of Cranes carrying various smaller birds across the Mediterranean, without, however, eliciting any further information as to whether such habit is an authenticated fact.

In the *Morning Post* of February 24, 1906, in an article entitled, "The Coming of the Wild Birds," by Mr. F. G. Aflalo, the matter is again referred to, in connection with a Bulletin edited by Mr. Ogilvie-Grant for the Migration Committee of the Ornithologists' Club, in the following passage: "Another fascinating episode observed in the wintry voyages of these birds, but not so far paralleled in the annals of spring migration, is the altruistic way in which the larger Owls help the little Golden-crested Wren over the intervening belt of greedy waters that it could, in all probability, never cross at all if not given a ride on the back of such powerful friends. Such records, trivial only to those with no soul for any study of birds beyond that of larks on toast, open up wonderfully fascinating possibilities of a deep-rooted socialism among the fowl of the air, compared with which our vaunted mutual helpfulness is meaningless in its effort and futile in its aims. It is for these reasons to be hoped that Mr. Ogilvie-Grant may one day induce his Committee to furnish naturalists with a corresponding Bulletin dealing with some of the more interesting and important winter fowl. Such an end would crown the work indeed."

It will be observed that here it is the larger Owls that are given the credit of carrying Golden-crested Wrens across the sea, and we are again led to ask, is this an authenticated fact? Other questions naturally suggest themselves, *e.g.*, do the Owls help the Golden-crested Wrens to the exclusion of other small birds? Are the latter the only small birds that are unable to make the passage by their own unaided exertions? And do they help themselves to a ride without asking leave of the Owls? Are the carriers limited to the Cranes and Owls? &c., &c. Seeing that such operations must necessarily be carried on over seas, direct observation is, of course, a difficult matter, but it would appear that there must be some substratum of fact to have given rise to the assertions, and the subject is such an intensely interesting feature of bird-migration that it is surely worthy of more extended observation and verification.

W.

74. Fir Tree.—Round the naked stem of a small Scotch fir in Southacre Wood, about twelve feet from the ground, there is a compact dense growth, seven feet high, four feet broad, and three feet thick. Some distance higher up the trunk the ordinary branches are to be seen. Can this abnormal growth be caused by insect, fungoid, or other injury?

EDMUND THOS. DAUBENY.

SELBORNIANA.

HINDHEAD.—We are pleased to hear that, at the request of a recent deputation, the Postmaster-General has arranged that the telephone poles are not to be erected over Hindhead, but along the railway.

BULLETIN OF THE BRITISH ORNITHOLOGISTS' CLUB.—We would specially direct attention to a leaflet in this number asking assistance in carrying on the important work of this Club in the study of bird-migration. All the proceeds of the sale of this Bulletin, which was noticed in our last issue, are to be devoted to this object.

HOW TO EXTERMINATE ORCHIDS.—Our attention has been directed to an advertisement in *The Garden* offering Bee Orchids from co. Clare at 5s. a dozen, carriage free. If this is not stopped it will be the turn of Kent and Surrey next, and probably not one of those supplied will survive for a year, whilst in no district is this species sufficiently abundant to stand much of a tax upon its numbers.

SURREY LANDSCAPES.—All lovers of Surrey landscape who can appreciate a first-rate technique in water-colour should pay a visit to the exhibition of the works of Mr. Sutton Palmer, now open at the Leicester Galleries, Leicester Square. From the summit of Hindhead to Frensham Pond, from the red roofs of Godalming to the Wey at Ripley, and the Thames at Richmond, and from the oak coppices of the Weald, carpeted with primroses and bluebells, to the fir-trees and heath of the Bagshot area, the many beauties of the county are charmingly portrayed.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

New Members.—*Central Society.*—At the Council Meeting on March 27, the following were elected members: Miss E. M. Coombs; H. W. Dickens, Esq.; George W. Gibson, Esq.; Herbert S. Jubb, Esq.; F. Edell Mainland, Esq.; S. E. Tench, Esq.; Miss M. W. Thornton; E. Newall Tuck, Esq.; John B. Ball, Esq.; Admiral Henry C. St. John; the Rev. I. Frome Wilkinson.

Abinger and Shere Branch.—The Rev. P. A. Micklem.

Birmingham Branch.—Lady Chavasse; Arthur Wallis, Esq.

Ealing Branch.—J. M. Jacobs, Esq.

Hampstead Branch.—Miss E. Baker; Miss Cates; T. Corby, Esq.; Mrs. Gairdner; H. Goodchild, Esq.; Griffith Humphreys, Esq.; Miss Monk; Miss Smith; A. J. Tallent, Esq.

Subscriptions.—The Council has pleasure in acknowledging subscriptions of greater value than 5s. from the following members: Mrs. A. Jones, £1 1s.; Mrs. Phillips, 10s. 6d; F. C. Stewart, Esq, 10s.; Mrs. R. F. Sturge, 10s.; Miss F. A. Gordon, 7s. 6d.; H. B. Lacey, Esq., 7s. 6d.; W. Percival Westell, Esq., 7s. 6d.; and donations from Mrs. Hyde Clark, 10s.; S. E. Tench, Esq., 2s. 6d. The Committee of the Hampstead Branch has pleasure in acknowledging a subscription of greater value than 5s. from the following member: E. J. Burr, Esq., £1 1s.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings of April 16, and May 14, for the purpose of issuing books to Members.

WINTER MEETINGS OF THE SOCIETY.

Saturday, February 17.—In spite of most inclement weather a good number of Selbornians assembled to visit Westminster School, by kind permission of Dr. Gow, the Headmaster. Mr. George Avenell read an interesting and highly instructive paper on the history of the school and its buildings. The oldest portion is undoubted the great school-room, called "Up-School," which was originally the monks' dormitory and dates from the eleventh century. It was converted to its present purpose in 1591. It has been considerably damaged architecturally by the work of a restorer who had it in hand rather more than a hundred years ago and who cased a good deal of it in brick, though there still remain traces of eleventh and twelfth century work. The College Hall is now the school dining-room: its walls date from the period of Abbot Litlington, who added the building to the monastery near the end of the fourteenth century as the Abbot's refectory. The roof is of arched beams on corbels, and dates, with the interior work generally, from about 1561. Noteworthy are some heavy tables of chestnut (?) made, according to tradition, from wreckage of the Spanish Armada. The present dormitory only dates from 1733. Ashburnham House, now the school library, is for the most part the work of Inigo Jones.

Records prove that a school existed on this site long antecedent to Elizabethan times. Henry VIII. laid the foundation of the present institution by entrusting the then monastic school to the care of the Dean and Chapter of Westminster; but it is with Elizabeth that the school's history really begins, and in its official parlance she is known as "Our Foundress and Benefactress." She provided for its government by connecting it with the Abbey, by which, except during the Commonwealth, it was administered until some forty years ago, when the management was handed over to a body of fifteen governors.

Two interesting old customs are still maintained, the annual Latin Play, which has been given almost without interruption since Elizabethan days, and tossing the pancake on Shrove Tuesday. Many Westminster boys have become famous, among whom may be mentioned Ben Jonson, Sir Christopher Wren,

Locke, Gibbon, Warren Hastings, Jeremy Bentham, Froude, and the poets Dryden, Cowper and Southey, while among the headmasters we note William Camden and Dr. Busby. This last famous pedagogue ruled for more than fifty years, and it was one of his boasts that on the bench of bishops were no less than sixteen of his ex-pupils.

Saturday, *February* 24.—Thirty-five members and friends were comfortably seated in the nave of the Crypt of St. John's Church, Clerkenwell, to hear from Mr. Henry W. Fincham an outline of the history of the Knights of St. John of Jerusalem, and their famous Priory Church. Less than ten years ago such an assembly would have been attended not only with discomfort, but with danger, as in the adjoining chambers were 325 coffined bodies, some of them deposited as late as 1853. The guide described the architectural features, which date from very early in the twelfth century. In fact, the three westernmost bays, which are Norman, are probably the oldest work we have in London of that period, excepting the Tower of London and the remains of the Confessor's Church at Westminster. Upon the arches and ribs of this portion can still be seen the chevron decoration and colouring. The two eastern bays, transepts, south chapel and the chambers on the north, date from about 1160-1170. Perhaps the most interesting feature described was the discovery made in 1900 of the remains of the foundations of a circular nave, which have been carefully preserved *in situ*. This ancient Crypt, now repaved with encaustic tiling on the same level as the original, and lighted by electric light, is once again used for meetings and services. The frontal cloth on the altar of the South Chapel, of red velvet, embroidered with gold wire, is sixteenth century work and was brought from Florence and presented by Vere, Viscountess Galway. Two out of the four medallions represent respectively St. John the Divine and St. John the Baptist. The shields which hang round the walls with the arms of the Grand Priors of this Ancient Order are the work of Mr. Fincham.

The party afterwards visited the St. John's Gate, which was the old south gate of the Priory, erected by Prior Docwra in 1504, and which, after many vicissitudes, is once again the property of the present Order of St. John of Jerusalem. After passing through the Library and the fine new Hall or Chapter Room, the Chancery was visited, where are many prints and other objects of interest, and next, the large rooms over the gateway, where no doubt Henry VIII. was once entertained, and where Cardinal Wolsey signed the lease for the ground on which Hampton Court was built. A hearty vote of thanks was here passed to our guide for this very interesting visit, and the party passed out down the ancient staircase in the west tower with its noteworthy wooden newel.

Saturday, *March* 3.—Upwards of sixty members assembled on this afternoon to avail themselves of the privilege of looking over Mr. M. Myers' ivory, tortoise-shell, and mother-of-pearl warehouse on Tower Hill. On the ground floor were huge quantities of the shells of the pearl oysters as they come from market, and are sent to the consumers, while specially arranged was a series of other shells used in the arts, which had been brought up from the stores in the basement. Mr. A. Van Noorden gave a pleasant welcome to the members, and made some brief remarks as to the destination of the shells and their uses for making buttons and knife-handles, and for inlaying. He also answered a number of questions, as for instance, with regard to the price of shell, chiefly *Margariti fera maxima*, which may range from £2 to as much as £16 per ton. Afterwards, the party mounted to the top floor where their guide gave them a graphic description of the hawk's-bill turtle, *Eretomochelys imbricata*, and its shell, which forms the commercial product. The members were told that the animals are no longer heated alive so that their shells may more easily be removed from the underlying bones, and they learnt that the amber-coloured plates of the under-side are the most valuable parts of the yield. A greater amount of time, however, was spent on the ivory floor, where many thousand pounds' worth of tusks was stored. Here also an exhibition had been arranged of the various teeth and tusks which form ivory, in addition to those of the elephant. A number of objects manufactured from ivory were also shown; and, although Mr. Van Noorden refused to give a set account for fear he should never leave off, he was good enough to make statements from time to time and to answer the hosts of questions which were put

to him. He was able to assure his hearers, from a personal examination of the tusks that come into the market, that only a very small proportion are taken from freshly killed elephants. The others are those which are found lying on the surface of the ground and come from animals which have departed this life in times gone by, or are brought out of stores where they have been hoarded by natives for generations. At the end of the afternoon a cordial vote of thanks was given to Mr. Van Noorden for his courtesy and kindness. It was proposed by the Honorary Secretary, Mr. Wilfred Mark Webb—at whose request Mr. Van Noorden had been so good as to arrange for the visit—seconded by the Honorary Librarian, Mr. H. H. Poole, who is also the Secretary of the Excursions Committee, and was suitably acknowledged by the recipient.

NEWS FROM BRANCHES AND AFFILIATED SOCIETIES.

Birmingham and Midland Branch.—On March 6, Prof. Bridge, F.R.S., Professor of Zoology at the Birmingham University, gave a lecture to the members and friends of the Selborne Society, on "The Simplest Forms of Animal Life." The Lecturer remarked that great progress had been made in the investigation of these simple forms of life during the last quarter of a century. This was chiefly owing to the improvement in microscopic appliances, and in the microscope itself. He spoke of the great variety and beauty that is found in the lowest forms of animal and plant life, and exhibited some of these by means of lantern slides. The forms are very varied, some being simple, while others are much more elaborate and show great beauty of design.

In speaking of the amœba, the lecturer explained, that though only a simple particle of jelly-like protoplasm, it was capable of exhibiting all the phenomena of life. An animal like this was face to face with the origin and nature of life. That was a problem, however, that the lecturer did not intend to discuss, for, so far, no definite explanation, or no theory worth the having, had been given to explain the nature and origin of life.

The lecture was of great interest throughout, and at the close a hearty vote of thanks to Prof. Bridge was proposed by Mr. J. Udall, F.G.S., and carried by acclamation.

East Riding.—On Thursday, February 8, the Rev. W. D. Wood Rees, the Honorary Secretary, gave a most interesting Lecture, entitled "Arachnida Filosa, or the Wonders of Spider Life," at Barmby Moor. A good audience was present and listened with marked attention and interest. The lecture was illustrated by means of an oxy-hydrogen lantern, kindly lent and worked by Mr. J. C. Boyden. The lecturer, on behalf of the Selborne Society, offered a prize to each standard in the school for the best account of the lecture. Twenty-seven have competed, and the result will be made known shortly. Votes of thanks were proposed by Mr. Seth Wilkinson, seconded by Mr. John Pocklington. The lecture was repeated at Market Weighton on February 14.

North Wilts Field and Camera Club.—A most interesting lecture on "The Wiltshire Dialect" was given on the 10th inst. at the monthly meeting of the Club, by G. Avenell, Esq., Vice-President. The lecturer treated his subject, with which he was thoroughly at home, in a most happy style, sketching briefly the history of the English language, and giving examples of special Wiltshire words, illustrating many by short humorous anecdotes, given in Wiltshire dialect. The Wiltshire literature was briefly outlined, many selections being read, to the delight and amusement of the audience. Richard Jefferies stands first, J. Aubrey and J. Britton are well-known Wiltshire writers; and with a reference to George Herbert's writings, the lecturer concluded a most interesting address. A hearty vote of thanks was proposed by the Chairman, Mr. T. C. Davison.

FORTHCOMING EVENTS.

COUNCIL AND COMMITTEE MEETINGS.

Monday, April 23.—Publications Committee at 5.30 p.m.
Tuesday, May 22.—Council Meeting at 5.30 p.m.

WINTER MEETING OF THE SOCIETY.

Saturday, April 7.—Visit to the Gardens of Syon House, Isleworth, by kind permission of His Grace the Duke of Northumberland. Assemble at the gates at 3 p.m. The Brentford and Hounslow trams pass the gates and also the Isleworth (Spring Grove) Station (S.W.R.), five minutes beyond Syon House. The Guide, Prof. Boulger, will speak on the life and work of William Turner, who lived at Syon from 1548 to 1550, and on the chief trees in the grounds.

EXCURSIONS.

Saturday, April 21.—Coulsdon and Farthing Downs. Meet at Coulsdon Station on arrival of train leaving Charing Cross 2.12, Cannon Street 2.12, London Bridge 2.20 p.m., S.E.R. (passengers from Cannon Street *change at Purley*). Return ticket, 2s. Guide, Mr. H. H. Poole.

Saturday, April 28.—Walk to Chipperfield Common; distance there and back about six miles. Book to King's Langley (L. & N.W.R.). Train leaves Euston at 2.20, Willesden Junction 2.32 p.m. Fare from Euston, 2s. 7d. return. Guide, Mr. L. Douglas Wilson.

Saturday, May 5.—Ramble in Epping Forest. Meet at Chingford Station at 3 p.m. Cheap return tickets, 1s. Trains leave Liverpool Street at 2.23 and Gospel Oak at 2.4 p.m. Guide, Mr. C. H. Cox.

N.B.—The times of all these trains should be checked in the April time-tables.

All communications with regard to the Winter Meetings and Excursions should be addressed to H. H. Poole, *Hon. Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

BOOKS IN THE LIBRARY OF THE SELBORNE SOCIETY.

(*Additions since May*, 1905.)

Avebury, Lord. British Flowering Plants. (1905)
Beavan, A. H. Animals I have Known. (1905)
,, ,, Birds I have Known. (1905)
,, ,, Fishes I have Known. (1905)

Crompton, J. Shaw, R.I. Album of Photographs. (1904)
Dewar, G. A. B. The Glamour of the Earth. (1904)
English, Douglas. Beasties Courageous. (1905)
Harvie-Brown, J. A. Travels of a Naturalist in Northern Europe, 2 vols. (1905)
Harwood, W. S. New Creations in Plant Life. (1905)
Henslow, Rev. Prof. G. Uses of British Plants. (1905)
Homeland Handbooks. The Great Ouse. (1905)
,, ,, Horsham and St. Leonard's Forest (1905)
,, ,, Lynton and Lynmouth. (1904)
,, ,, Reigate and Redhill. (1905)
,, ,, Seaford and Newhaven. (1905)
Hooper, Jas. Nelson's Homeland. (1905)
Janet, Chas. Description du Matériel d'une Petite Installation Scientifique. (1903)
,, ,, Observations sur les Fourmis. (1904)
,, ,, Observations sur les Guêpes. (1903)
Job, H. K. Wild Wings. (1905)
Kerr, Richard. Nature through Microscope and Camera. (1905)
Lankester, E. Ray. Extinct Animals. (1905)
Macray, W. Dunn. Charters of Selborne Priory. (1191)
N., E. B. To Selborne for a Holiday. (1905)
Patterson, A. H. Nature in Eastern Norfolk. (1905)
Peckham, G. W. and E. C. Wasps—Solitary and Social. (1905)
Roberts, C. G. D. Red Fox. (1905)
Scherren, Henry. The Zoological Society of London. (1905)
Sheppard, T. The Making of East Yorkshire. (1906)
Snell, F. C. The Camera in the Fields. (1905)
Step, Edward. Wayside and Woodland Blossoms. (1905)
Watkins, W. E. and Sowman, A. School Gardening. (1905)
Westell, W. Percival. British Bird Life. (1905)
White, Gilbert. Natural History of Selborne. (Edited by Captain T. Brown.) (1834)
White, Gilbert. Natural History of Selborne. (Edited by E. Blyth.) (1836)
White, Gilbert. Natural History of Selborne. (Edited by Sir William Jardine and E. Jesse.) (1870)
White, Gilbert. Natural History of Selborne. (Edited by J. E. Harting.) (1875)
White, Gilbert. Natural History of Selborne. (Edited by Sir W. Jardine.) (1890)
White, Gilbert. Natural History of Selborne. (Edited by L. C. Miall and W. Warde Fowler.) (1901)
White, Gilbert. Natural History of Selborne. (Blackie.) (No date)

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Nature Notes:
The Selborne Society's Magazine.

No. 197. MAY, 1906. Vol. XVII.

ANNUAL MEETING AND CONVERSAZIONE.

THE Annual Business Meeting will be held at 20, Hanover Square, on May 30, at 8 p.m.

The Annual Conversazione has been fixed for May 25, and will be held at the Offices of the Civil Service Commission. Lord Avebury will preside and give his address, while there will be, as usual, an exhibition, and a lecture. The Secretary will be glad of any help with regard to exhibits of microscopes and of objects of Natural History and antiquarian interest. Any Members who could take part in arranging the exhibits on the previous night, or who would act as stewards on the evening in question, should communicate with him. The regulations with regard to tickets are given on p. 99.

MAY.

IT is difficult to imagine anything more beautiful than our English woodlands, just at the time when the oaks are bursting into leaf and the hyacinths into bloom. The young foliage of elm, birch, maple and bramble is lovely to look upon in its early perfection, marred, as yet, neither by insects nor boisterous winds, and various other trees and bushes putting on their dainty spring apparel, furnish a great variety of delicious transparent tints. The hawthorn, unsurpassed by anything else as to the colour of its tender young leaves, has, alas! already lost its early purity, and its lovely liquid green has begun to wax darker, duller and more opaque. The glowing emerald hue, in which the larch is arrayed on its first start into life and growth, is also passing into a more sober green. But who shall essay to describe the exquisite creamy tints of the young oak leaves, from the first unfolding

of the bud, to the time when each mighty limb is fully clad in living green? The rosy pink tinge with which the opening foliage of oak, walnut, maple, and several other trees are at first suffused, grows daily fainter, and the leaf gradually takes on a more decided green. As the oak trees do not all begin to open their buds at exactly the same time, a group of them at this season in various stages of development presents a pleasing variety of colour.

Just at the time when this tree and the ash are coming into leaf, the ground beneath them is in many places carpeted with flowering hyacinths. I know of no other native blue flower (the bugloss, perhaps, excepted) which floods the ground with colour as the bluebell does. It is to the woods what the buttercup is to the meadows. In the more open parts wide breadths of brilliant blue colour are seen stretching away in different directions, their edges going off gradually and insensibly into the golden green of the young grass, just as, overhead, the faint delicate tints of the clouds melt into the surrounding ether. It is hard to say when or under what aspect these fields of azure are most attractive; whether in the bright morning sunshine, or when, in the deepening twilight, their cool hue melts imperceptibly into the dark, transparent shade of some hollow or recess among the tree trunks; or again, when, in the near foreground, the drooping bells are sharply relieved against the sombre foliage of holly or yew. Later in the evening when their colour fades into a pale silvery tint, and form and outline are becoming vague and indistinct, the myriad nodding blooms closely massed together, seem no longer to belong to the earth, but to have acquired a more ethereal character, their colour floating like a thin haze or mist among the trees.

In hilly, uneven ground covered with bluebells, many pleasing effects may be seen, as, when the contour of each rounded knoll is outlined in intense blue, while surfaces inclining towards the eye appear as though merely tinged with that colour. The effect of water standing under the trees of a wood is sometimes produced by these flowers, when seen from a distance.

At this season, when the fresh green tint of opening leaves is associated with the rosy blush of flowering crab and apple and the cheerful hue of the red campion, when gardens are gay with tulips, anemones and sweet-scented gilly-flowers, set off by the snowy bloom of the pear and cherry, the beauty of the country seems almost beyond the power of human language to describe. The birds in their songs can alone express it and do it justice. For months past the coming of summer has been foretold by many a tuneful prophet. Before winter was over the loud exultant notes of the "storm cock" announced the approach of the general awakening; and, a little later, garden, orchard and grove rang with the jubilant songs of thrushes innumerable. But the voice of the blackbird was not yet heard. He bides his time, for it is not of the future that he sings, but

of the present. It is not for him to *foretell*, but to *announce the arrival* of the long looked-for season of life and growth. When buds are unfolding and expanding into leaves, when the country is full of sweet sights and sounds, when our spirits are uplifted and entranced by the sweet influences of the season, then the ousel cock can no longer keep silence, and breaks into song. The glorious flowing melody which pours from his throat is but a vocal expression of the very essence or spirit of the sweet springtide. Hidden from sight in some leafy copse he trolls out his rich, mellow, impassioned notes—so strangely human in their intonation, proclaiming the universal rejuvenescence, and telling of the scents of the spring flowers, of meadows aglow with buttercups, and hedges clad in tenderest green. And from the upper boughs of some spreading oak there comes at intervals that soft, tremulous and soothing voice by which we know "the winter is" indeed "past . . . . the flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in our land."

G. T. Rope.

CENTIPEDES AND MILLIPEDES.

MR. Wilfred Mark Webb, our Honorary Secretary, is preparing a monograph on the British Centipedes and Millipedes for the Ray Society, and will be glad of the assistance of those who may be willing to collect specimens for him. For the guidance of such collectors, he has privately printed some "Hints," with a systematic enumeration of species and figures of eight generic types, from which, with his permission, we extract the following remarks as to the habitats of these animals and the method of collecting.

"Both Centipedes and Millipedes may generally be looked for in places similar to those in which land-shells, beetles, and woodlice are found, namely, under stones and logs, beneath the bark of dead trees, and at the roots of grass and herbage, as well as among vegetable refuse. Entomologists find that some species come to the sugar intended for moths."

"The animals should be collected straightway into tubes of weak spirit (30 per cent.). They then become gradually narcotised, and die in a limp condition, in which they can safely be left for some weeks. They must, however, be preserved permanently in 70 per cent. spirit. Formalin should not be used, as it appears to discolour and spoil the Millipedes. In actual collecting it is useful to have a small dry tube, which can be held in front of quick-running Centipedes, so that they may enter it and be captured without injury. It is then an easy matter to transfer them to the tube of spirit."

Mr. Webb will supply collectors with tubes; but in other

cases a label with place and date of collecting, written in thick lead pencil, should be put inside the tube. Specimens should be sent to Mr. Webb at Odstock, Hanwell, W.

INSTINCT *v.* REASON.

WE have received the following letter from a correspondent in London :—

"Many (or perhaps I should say most) people persist in denying to animals the faculty of reason, ascribing all their actions to 'instinct.' Now instinct may be defined as 'natural impulse,' which doubtless *predominates* in all animals, whereas man's instincts are, or should be, subordinate to his reasoning powers. To say, however, that every action of the dog (generally considered to be the most intelligent of quadrupeds) is governed by instinct, is simply absurd. The following instance of what I should most certainly describe as reasoning power was afforded by a short-haired black cat (a male) about six months old. Some little time ago my sister, standing at her bedroom window (on the top floor) and seeing this cat below, clapped her hands to attract his attention. 'Sambo' immediately looked up, and running into the house, in less than two seconds was at my sister's side. As the animal had to mount four flights of stairs (in as many different directions) and pass half-a-dozen doors, of which two or three were probably open, on the way, it must have known how to reach its mistress. Instinct could not have possibly been the cat's guide, especially as it had not been born in the house. I have related this little incident, not as anything remarkable in itself, but simply to show the ordinary intellectual powers of even our feline friends. We allow a varying amount of intelligence to the higher animals, but how this is to be distinguished from intellectual power I fail to understand.

"Again, pigeon-fanciers, I believe, are accustomed to talk of the 'homing instinct of the carrier'; but is not this faculty of 'homing' due to the bird's remarkable powers of vision, which enable it to recognise landmarks immense distances away? Otherwise, why has it to be trained, and moreover, why, when first thrown up, does the bird fly round in ever-widening circles before darting off in a certain direction?"

We have always thought that much of the difference of opinion in this perennial controversy is due merely to a want of precision in the use of terms. By "reason" some writers mean the power of generalising, or—what is, perhaps, implied therein—that of forming a syllogism; whilst others mean the power of abstraction. "Instinct," again, is applied alike to the chicks seeking refuge on their first sight of a hawk, which may be inherited experience, and to the automatic way in which we wind up our watches when undressing for the night, which is certainly an acquired not an inherited habit. The mental processes which lead a dog to bark at all shabby persons and not at the well dressed, or to express pleasurable anticipation of a walk when we take our hat down from its peg, seem to involve generalisation or syllogism, but not the formation of abstract ideas. We had just read the above letter when we came upon the following passage in a sermon by an eminent Jesuit :—

"Brutes are devoid of reason. Instinct, indeed, they have, but not reason. For reason apprehends the abstract and the universal; whereas brutes apprehend only the concrete and the singular. Moreover, where intellect is, there must be intellectual progress; but brutes make no intellectual progress. They exhibit no individual free variation in method; for instance, in nest-building or in song. The chaffinch builds an elaborate nest, but all chaffinches build exactly in the same way. Ants and bees work in a wonderful, mathematical fashion, but they worked exactly in the same mathematical fashion in the time of Aristotle, 2,300 years ago. There has been no progress. The sheep is as silly now as then. The goose cackles as foolishly now as then. The nightingale always sings like a nightingale; the ass always brays like an ass. No brute ever invented a mechanical instrument; or lit a fire; or manufactured an overcoat; or devised a pair of boots; or intelligently handed on a piece of information from one generation to another."

The learned preacher has probably never heard of birds in our parks building their nests of wax vestas, of others using steel watch-springs, or of the frugivorous ground-parrot of New Zealand which has become carnivorous.

In another column of the same paper we found the following story:—

"Two fox-terriers had held the house for several years in undisputed possession so far as four-footed animals went, until one day a poor little waif of a kitten was given shelter. The dogs showed the utmost jealousy at the first sight of the kitten, and hour after hour their jealousy increased. If any one spoke to the kitten the dogs were up in arms at once, barking, rampaging. If the kitten were offered a saucer of milk, the dogs would bark and snarl so fiercely that the poor little thing would be afraid to touch it. Their jealousy was so marked and so bitter that every endeavour was made to overcome it, but without success; and everything was done to guard the kitten from real danger. But one day the kitten mysteriously disappeared. And a few hours later a gardener, digging a flower-bed, was greatly struck by the demeanour of the terriers, who seemed to have developed an unusual liking for his society. They sat together as still as statues, hard by where he was digging, intently watching his every movement. So mysterious, almost uncanny, was their behaviour, that the gardener at last rushed at the dogs, waving his spade to drive them away. And then, in the ground, just where the dogs had been sitting, something became evident that told a terrible tale. The tip of a poor little waif of a kitten's tail protruded from the earth. It was quite clear that the jealousy of the dogs had been so extreme that they had committed deliberate murder, and they had dug a grave and tried their best to bury the corpse. Disturbed by the gardener, they had, with one accord, to hide their guilt, sat on the tip of the tail that had refused to be buried."

It was certainly a curious coincidence that in reading Pepys' Diary, about an hour later, we came to this passage, under the date of September 11, 1661:—

"To Dr. Williams, who did carry me into his garden, where he hath abundance of grapes; and he did show me how a dog that he hath do kill all the cats that come thither to kill his pigeons, and do afterwards bury them; and do it with so much care that they shall be quite covered; that if the tip of the tail hangs out he will take up the cat again and dig the hole deeper. Which is very strange; and he tells me, that he do believe that he hath killed above a hundred cats."

NOTES ON LONDON BIRDS IN 1905.

BEFORE January of last year was over, there were many indications of the coming of spring. On the 22nd a Woodpigeon was sitting on her nest in Norfolk Crescent, Hyde Park, and on the next day I heard the spring call of the Great Tit. The Black-headed Gulls on the Serpentine were early in assuming their breeding plumage, one bird had completed its black hood by February 10. So regularly do the Black Swans now nest that it is hardly worth while to do more than mention that one brood was hatched in Kensington Gardens at the end of last March, and another in July, but in spite of the persistent and regular way in which nests are made and eggs hatched, the numbers do not appreciably increase.

When one has walked along the banks of the Serpentine and Long Water almost every day at about the same hour for eleven months in each year for seventeen years, it is possible to guess with some degree of accuracy what birds are likely to be seen, and also where they will appear. Thus, on the first day which has a real feeling of spring in the air Wheatear will probably be seen on the open land in Kensington Gardens to the east of the water. In 1904 I altogether failed to notice this species in London, but last year I had the pleasure of seeing it in Kensington Gardens on the evening of March 22, which is the earliest date in my town experience. No Wheatears were on the open ground already alluded to when I passed it on my morning walk, but going out of my way to return by the same route in the evening in order to work over the ground again, I was rewarded by finding a fine male bird. Curiously enough, I only saw one other Wheatear in London last spring, a hen bird which was being chased by a sparrow in Hyde Park at half-past seven on the morning of April 1. Other spring visitors were rather late: the Willow Wren was singing in Kensington Gardens on April 26, on which day I noticed two broods of ducklings, and on the following day some Sand-martins and a House-martin were flying over the water. On April 28 the Reed Warbler and another Willow Wren were singing in Kensington Gardens, and I saw a Swallow there. On May 11 I heard two Reed Warblers, one in Kensington Gardens and one on the island in the Serpentine. On May 24 a Garden Warbler, a rather scarce visitor, was singing in fine style by the banks of the Long Water, and on the following day at the same spot I saw and heard a Sedge Warbler. On this day also my sister reported seeing the Spotted Flycatcher in Kensington Gardens, where I observed some the next morning.

Throughout the summer Swifts may be seen in town every now and then, usually in rough and stormy weather: there were a few flying over the Round Pond on the evening of June 7, and on the 26th of that month I saw several flying very high over West Kensington.

On October 1 four Lesser Grebes were to be seen on the Round Pond, and during this and the next few days there were several Sand-martins, House-martins and Swallows in London; all no doubt thinking of their approaching departure. On October 4 they had all disappeared: the weather had become a good deal colder.

On October 27 I noticed a Blackbird with a white head near Hyde Park Corner. The thrushes began to sing in Kensington Gardens on November 4, and on the 6th of that month two Grey Wagtails (young birds, I think) were on the banks of the Serpentine. On December 7 I found a Meadow Pipit running along the edge of the water in Hyde Park; and throughout this month a few Greenfinches were frequently seen close to the Bridge and nearly always on some birches.

51, *Gloucester Terrace*, A. Holte Macpherson.
Hyde Park, W., February 4, 1906.

LETTERS TO THE EDITOR.

The Queen and Murderous Millinery.

Sir,—With reference to the Queen's letter in which she expressed her concurrence in the protest against the use of the aigrette as headgear, it may perhaps have escaped the notice of the public that the Humanitarian League had previously drafted a Bill which would render illegal the sale of certain feathers as millinery, including those of the Egret and Bird of Paradise.

Is it too much to hope that some member of the present Parliament will take up the matter?

I am, yours faithfully,
April, 1906. Bird Protector.

Prehistoric Tombstones.

Sir,—In your March number Mr. Johnson writes of a standing stone, or menhir, at Studland, near Swanage. I thought I knew Studland tolerably well, but I know of no such stone. Will Mr. Johnson kindly mention its whereabouts? I can hardly suppose he can be referring to the Agglestone or the Puckstone, since, though tradition avers that the former was dropped by his Satanic majesty, who had intended it to crush Salisbury Cathedral, these masses of stone are merely ferruginously cemented weathered portions of the Lower Bagshot Sands and are not detached from the rock below them.

Yours faithfully,
F. G. S.

REVIEWS AND EXCHANGES.

The Natural History of Selborne. By the Rev. Gilbert White, M.A., rearranged and classified under subjects by Charles Mosley. Elliot Stock. Price 6s. net.

The late Mr. Grant Allen expressed the opinion that the value of White's "Selborne" is now mainly literary. If this opinion, with which we do not agree, were well founded, there would be no *raison d'être* for the present work. As, however, there are many small points on which our modern knowledge has corrected White's statements, we think it a pity to re-issue his book, in a form intended presumably for use by young naturalists, without any notes as to such corrections or new identifications. This edition contains the whole of the "Natural History," even to the extent of inserting under the head of "Miscellany" some passages of a merely complimentary character, which, in their detached position, appear objectless. "The Naturalist's Summer Evening Walk" is added; and, by a happy thought, the frontispiece of the first edition, as to the possible presence in which of a portrait of the author a controversy was formerly carried on in our pages. It is neatly bound and well printed, though we notice "Adamson" on p. 125 for "Adanson." It is strange, however, that Mr. Mosley, in his brief "Introduction," falls, like his predecessors, into a series of little blunders. Not to dwell on the fact that White's college is not usually termed "the Oriel College," instead of being "six years Senior Proctor," the naturalist was Junior Proctor for one year, and "The Wakes," the house in which he died, was not "the selfsame house in which he first saw the light," as he was born at the Vicarage.

Oologia Universalis Palæarcticæ. Part I. By George Krause. Complete in about 150 parts. Williams and Norgate. Price 1s. 6d. net each, or 1s. 3d. net. by subscription.

This will be a magnificent monograph on the eggs of the birds of the Palæarctic Region. It is to contain two or three plates in each part, and is to be completed in about two years. Each species is represented by a separate coloured plate and a page of text in German and English, with synonymy, geographical distribution, breeding-season, nest characters and variations in size, &c., in tabular form. In this specimen part there are four species, *Aquila chrysaëtus*, represented by figures of five eggs, the Raven by sixteen, the Quail by twenty and the Thrush by twenty-five figures. These plates are exquisite, and both plates and text are printed on loose sheets of card. It is much to be regretted that the text should have been left to someone quite ignorant of the English language. The Golden Eagle, for instance, is also named "Black-backed Eagle, Bingtailed Eagle"; its eggs are said to be in shape "a full roundish oval with a nearly equatorial dopp-height;" their shell "rough and strong, sometimes the pores are oblong like tears of needles": the nest, "a bulky eyry, careless constructed of sticks, that is over-built every year; with a fine lining of brushwood, grass and wool": whilst under "Remarks" it is stated that "Almost ever the eggs of a set vary very considerable in colour, size and shape." The remark as to the Quail that "the female only breeds, the male is polygamous," is, at first blush, somewhat puzzling, until, glancing at the German equivalent, we realise that "broods" is meant.

Nature Knowledge in Modern Poetry, being Chapters on Tennyson, Wordsworth, Matthew Arnold and Lowell, as Exponents of Nature Study. By Alexander Mackie. Longmans, Green and Co. Price 2s. 6d. net.

This little book consists of ten appreciative papers reprinted from *The Scottish Field*, the first four of which deal with Tennyson as botanist, entomologist, ornithologist and geologist respectively, whilst the birds of each of the three other poets are dealt with in a chapter apart from their general natural-history allusions. Of the four poets, Wordsworth evinces the deepest love for Nature and Lowell perhaps the prettiest fancy in his allusions, while Matthew Arnold has but a few similes drawn from her store, and Tennyson had undoubtedly the widest scientific knowledge. Nothing in the published biographies of the two great contempo-

raries seems quite to justify Mr. Mackie's description of Tennyson as the friend of Darwin; and the author does not seem to be aware that the same inspiration drawn from the theory of evolution which is to him an excellence in the poetry of Tennyson, furnished the text of a savage onslaught by Mr. Swinburne, who, in his article "Tennyson or Darwin," writes as if these allusions and illustrations were the baldest and most unpoetical of didacticisms. Mr. Mackie's anthology of passages is fairly complete, and his essays cannot fail to interest those who love both poetry and Nature.

A Primer of Forestry. Bulletin 24, *U.S. Department of Agriculture, Division of Forestry*. By Gifford Pinchot, Washington. Part I.—The Forest, 1903. Part II.—Practical Forestry, 1905.

The first of these attractive little books treats of the life of a tree, including the structure of wood and the life and enemies of the forest, touching upon grazing, trampling and forest fires. The first half of the second volume is occupied mainly by a short account of silvicultural systems and of conservative lumbering, the second by a discussion of the relation of forests to climate, and a short history of forestry, with special reference to the United States. Sixty-five whole-page plates, besides 130 figures in the 176 pages of text, is almost too liberal an allowance; and we cannot help feeling, in not a few cases, that a drawing or even a diagram might be more instructive than some of the photographs employed.

Lessons from Life (Animal and Human): a Compendium of Moral Teachings illustrated by curious and interesting Habits, Relations, Instincts, Peculiarities and Ministries of Living Creatures. With an Introduction by the Rev. Hugh MacMillan. Elliot Stock. Price 3s. 9d.

This comprehensive volume affords an abundance of improving reading, mostly anecdotes of animal life, from which excellent morals are drawn. These are grouped under the headings: "Creatures of the Air, Creatures of the Water, Creatures of the Land, and Human Beings," whilst three indexes, of subjects, moral truths, and passages of Scripture, should render the book of great use in providing preachers with illustrations.

Homeland Handbooks: Dorchester (Dorset) and its Surroundings. By F. R. and Sidney Heath. With a Foreword by Thomas Hardy, and a chapter upon the Country Walks round Dorchester by the late Henry J. Moule. Homeland Association. Price 1s. net.

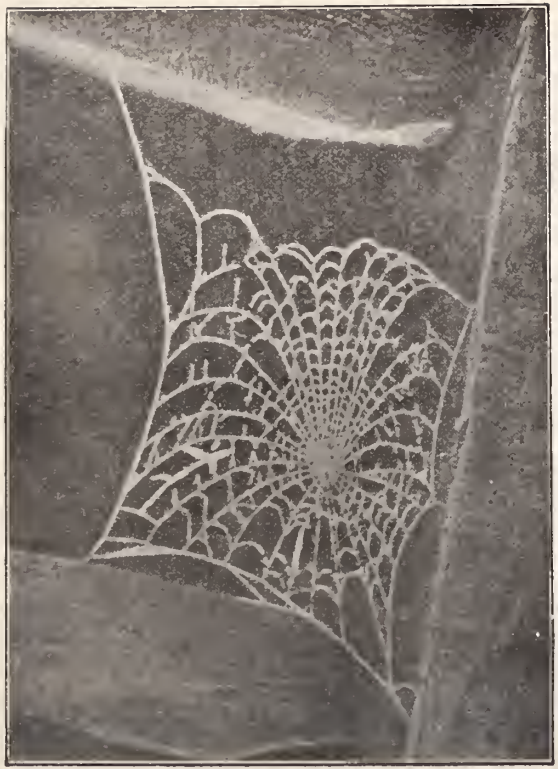
Dorchester in Dorsetshire—there is another in Oxfordshire—has three real interests. Its present rank as a county town is the historically natural sequel of its ancient importance in Roman and Romano-British times, and of these times Maiden Castle and the amphitheatre of Maumbury Rings are the most striking memorials. In the immediate neighbourhood lived William Barnes, the Dorsetshire dialect poet, and within two miles of the centre of the town was born Thomas Hardy, whose works have made the whole of Wessex classic ground to the student of English literature. These three interests are admirably represented in this, the Corporation's Official Guide.

Vegetables, by Horace J. Wright; and *Perennials*, by T. W. Sanders. Agricultural and Horticultural Association. Price 1d. each.

These, the fourth and fifth number respectively of the "One and All Garden Books," maintain the character of this excellent and phenomenally cheap series of popular illustrated handbooks.

Notes from Nature's Garden. By Frances A. Bardswell. With thirty-four illustrations from photographs. Longmans, Green and Co. Price 6s. 6d. net.

Some forty brief papers, arranged under the four seasons, written mainly near the Norfolk coast, and treating of out-door life from the contemplative and appreciative rather than the instructional point of view, make pleasant reading, whilst the illustrations, four of which we are permitted, by the courtesy of the publishers, to reproduce, are of exceptional excellence and of a varied interest.



Spider's Web in Frost.

Web-weaving.

(From "Notes from Nature's Garden," by kind permission of Messrs. Longmans.)

WHERE CATTLE ARE LOWING—

AND SHEEP ARE BLEATING.

(From "Notes from Nature's Garden," by kind permission of Messrs. Longmans.)

Epsom College Natural History Society Report for 1905. L. W. Andrews and Son, Epsom. Price 1s. 6d.

The local phenological lists of plants, Lepidoptera, and birds, the meteorological record, and that of the weights and measures of the boys, maintain the value of this Report, apart from an interesting paper on Castleton, in Derbyshire, some Notes on Duckweeds, and several excellent photographs, mostly local. At the same time, it is regrettable to read that the Society is not adequately supported by the School as a whole.

Received: *The American Botanist* for March; and *The Naturalist*, *The Irish Naturalist*, *Knowledge*, *The Animal World*, *The Animals' Friend*, *The Humanitarian*, *The Parents' Review* and *The Agricultural Economist* for April.

NATURAL HISTORY NOTES.

343. Cat and Mole.—A homeless cat has haunted the neighbourhood of this house for some considerable time. A capital mouser she is. On her coming over the garden wall this morning (April 1) to receive our bounty as usual, I noticed a black object dangling from her breast. On a closer inspection it proved to be a full-grown mole, dead but warm, so firmly attached to the skin of the cat that it required some force on my part to remove it. It was thus pretty evident the cat had attacked the mole, which retaliated, and had hung on even in death with bull-dog tenacity. That the mole is an animal of great determination I have known for many years.

Fyfield, near Abingdon. W. H. WARNER.

344. Stoats.—Stoats are known to be great egg-stealers, and their method of taking them away has long puzzled me. Some time ago the opinion was given in NATURE NOTES that they carried them in their mouths, an impossibility, as it seemed to me, owing to the small expanse of the stoat's jaw. I have come across a man here who has been associated with the preservation of game all his life, and who has caught stoats in the act of purloining eggs. He says they carry them under their chins against their breast. Stoats with young will rob every partridge's nest in field after field round their home.

April, 1906. EDMUND THOS. DAUBENY.

345. Tame Deer.—In the papers there has lately been an account of a tame deer attacking and killing its owner. The males of the deer tribe are not to be depended on as pets, and the tamer they become the more dangerous they are sure to be. In taming a timid creature like a deer, we destroy its fear, but not its pugnacity; and when its natural fear is gone, it will use its horns against men and other animals from which in a wild state it would instinctively flee. For the same reason, though perhaps in a less degree, bulls and rams are dangerous and not to be trusted. In the case of a ferocious animal, such as a lion or a bear, becoming tame, it is its tendency to attack that is destroyed. A tame lion is not so treacherous as a tame deer.

Southacre, Swaffham, April, 1906. EDMUND THOS. DAUBENY.

346. Guardian Birds.—The *Standard* of March 14, 1906, reviewing "Recreations of a Naturalist," by James Edmund Harting, quotes from that work as follows: "A very curious account, too, is given of the experience of lighthouse keepers as to the immigration of birds, which they have the best opportunities of watching. A remarkable confirmation of what, it seems, has long been asserted by foreign travellers and ornithologists—namely, that the small birds cross the sea carried on the backs of larger ones—is given by the foreman of the South Gare Breakwater at the mouth of the Tees. In 1882 he saw a short-eared owl 'come flopping across the sea,' and when it 'lit down within ten yards of where he stood, a golden-crested wren dropped off its back,' which the man followed and caught."

Here we have, at length, one apparently established instance of direct observation of this curious habit, though so long ago as 1882. It is strange if no other observation confirmatory of this has been made during the last twenty-four years.
W.

347. Rooks Stealing Eggs.—The other day about a dozen rooks passed over my head. One of them I noticed had an egg within its beak, which it dropped into a field, when all the rooks immediately swooped down for it. The egg was white, and apparently about the size of a pigeon's, and I should imagine must have been purloined from another bird's nest.
April 4, 1906. JOHN HORNE.

348. Moorhen Perching.—I lately saw three moorhens perching up a tree. As I have never hitherto seen these birds except on land or water, I thought it rather unusual. The tree was growing on the edge of a lake, and one of the branches hung over and just touched the surface of the water. The birds had obtained a footing on this branch from the water, and had climbed up to a height of about 9 or 10 feet, where they remained for about ten minutes.
Clifford House, Clark Road, Wolverhampton. JOHN HORNE.
April 4, 1906.

349. Croaking of Frogs.—The croaking of frogs or toads is audible at some distance, even when uttered beneath the surface of the water, and the love-call of certain fishes may be distinctly heard from a depth of several fathoms. From this we may gather that sounds originating under water pass more or less readily into the air. It would seem, however, that sounds do not pass at all readily into water from the air; and that fish, and other tenants of our ponds and rivers, are insensible to all but violent sounds that occur in the air above them. I have frequently talked in the presence of a trout, over which I had thrown a fly, without disturbing it, though a slight stamp on the ground sent it off at once. Indeed, I cannot recall an instance of fish under water being frightened by the ordinary use of the human voice. When stalking a trout, fly-fishermen often ask their friends not to speak; but if they did, would the chance of catching the fish be seriously lessened? The auditory apparatus of fish is well developed.
April, 1906. EDMUND THOS. DAUBENY.

SELBORNIANA.

LINCOLN'S INN FIELDS.—We take the following from the *Manchester Evening Chronicle*:—

With the County Council's attempt to untie the tangle of the town's traffic we all must sympathise, but it is annoying to find that the rage for newness sweeps away all the picturesque spots which make London dear to the hearts of her sons.

In connection with wide Kingsway, it was decided that various side streets would have to be remodelled, Sardinia Street among them, and I am sorry to hear from a L.C.C. official that, in addition to the Sardinia Chapel, the ancient arch facing Lincoln's Inn Fields must be demolished. Why? True, it serves no useful purpose, but, on the other hand, it is not in the way, and it gives a delightful old-world touch to a pleasant part of Central London. I always think of the spirit of Charles Dickens haunting this corner.

Built by the great architect, Inigo Jones, in 1648, the massive arch had above it a room which formed part of the Spanish Embassy, and here, in troubled times, men were always on guard. The adjoining chapel of S.S. Anselm and Cecilia, now a very plain building, was sacked and burned in James II.'s day, and on June 2, 1780, the Gordon rioters partly demolished it.

In a house close by, Cromwell met Thurloe at night to discuss a plan for the seizure of the Prince of Wales and the Dukes of York and Gloucester. It is

said that a clerk remained unnoticed in the room pretending to be asleep, and when discovered, Cromwell would have run him through the body but for the intervention of Thurloe. So the clerk escaped and warned the royal trio of their danger.

In the square before the old arch took place many executions, and we read how a masked headsman, all in black, beheaded Lord William Russell in 1683, for alleged complicity in the Rye House Plot. The whole district is saturated in history, and it ought to be the duty of the County Council to preserve such ancient landmarks as fall into their hands.

NETTLEBED COMMON.—The following passages are from an interesting article, with reference to a Bill now before Parliament, in a recent issue of the *Times* :—

The Chiltern Hills form one of the most beautiful tracts of chalk downs to be found anywhere. The smooth expanse of turf, the closely nibbled furze clumps, and the weird junipers which are familiar to us in Surrey and Sussex, give place on the Chilterns to great beech woods, which spread a carpet of warm russet over the white ground.

* * * * *

There are few fences or hedges in the Chiltern country. In some places low banks mark off copse or wood ; in others the beech groves spring straight from the open down. It may be imagined that in such a country it is not easy to distinguish common land from land in private ownership ; and it is probable a large area has passed from one category to the other. The process is something of this sort. The beeches thrive in some corner of a common, which from this cause becomes less and less useful for purposes of pasture. A bank is thrown up, not high enough to exclude cattle, but sufficient to mark off the ground and indicate an enclosure ; in process of time uncertainty arises whether the piece of woodland ever was common, and finally it takes rank as private land. There can be no doubt that this process has gone on, and is going on, upon the Chilterns, and it is accelerated at the present day by the comparatively slight use which is made of common for grazing or wood-cutting. For purposes of human enjoyment, commons, of course, never had so high a value ; but the man who strides over the Chiltern Hills for the purposes of refreshing mind aud body is the last man to know anything of the ownership or legal characteristics of the beautiful scenes through which he passes.

When, therefore, in such a country, we find a lord of a manor ready to dedicate to the public a large stretch of common land, and to put it out of danger of enclosure for all time, we may rejoice at once over the good fortune of the public and the handsome conduct of the landowner. Such an occasion for rejoicing is furnished by a Bill now before Parliament, entitled the "Nettlebed and District Commons Preservation Bill." Mr. Robert Fleming, of Joyce Grove, Nettlebed, is the owner of the manorial rights over a large tract of common land, of which the more notable portions are Nettlebed Common, Highmoor Common, and Highmoor Common Wood. The village of Nettlebed stands at the top of a steep ascent, five miles from Henley-on-Thames, and is said to occupy as high ground as any village in England. On both sides of the village lies the common —near the houses smooth turf, leading away to gorse and bushes, beech scrub, and the fine woods and cherry trees of Highmoor. A better specimen of a Chiltern common, breezy upland, fine down turf, well-grown beech and oak, it would be impossible to find. This beautiful tract, and others like unto it, Mr. Fleming proposes to place under the management of a body of conservators, representing the owners of the several groups of commons and the neighbouring local authorities.

* * * * *

By means of an exchange to be effected by the Act, a hill near Nettlebed village, which at some date was no doubt part of the common, but which has long since been enclosed and crowned with a windmill—we can imagine old references on the Court Rolls to the Lord's Mill, and its occasional use for grinding the grain of the village—is to be restored to the common, in substitution

for a small strip in front of Joyce Grove, which is to be added to the grounds of the house. Windmill Hill is the highest point in Oxfordshire, and naturally commands an extensive view of chalk down, beech wood, field and meadow; and its addition to the common will be of inestimable value to the public.

* * * * *

It may well be imagined that an arrangement so highly advantageous to the public receives the warm approval of the Commons Preservation Society. That body is responsible, with the assent of Mr. Fleming, for the Bill before Parliament, and under such auspices there is little chance of miscarriage. It is the settled policy of the Society to place commons under local management. Until this is done no common is quite safe. Rights of common fall into disuse, the land which carries them may pass into the hands of the lord of the manor, and thus the rights may be extinguished; or the commoners and the local public may not be public-spirited enough and wealthy enough to embark on a lawsuit for the purpose of resisting encroachments, which are of small pecuniary import to them, though highly dangerous to their rights and to the public interests. And even where common rights are numerous and actively enforced, there are many evils which cannot be effectively dealt with. Gravel may be dug for the highways to an unwarranted extent and in a reckless manner; neither lord nor commoners can remedy the evil until the common is put under management as an open space.

Spoiling the Broads.—"There are few places dear to the holiday-maker and tourist more jealously regarded than the Norfolk Broads. Fascinating in themselves, unique in many charms, and overwhelmingly popular with those who love open-air life and the pleasures of inland cruising, boating, fishing, or camping out, it is inconceivable that any one can think at the present day of lessening their beauty or curtailing public privileges within their limits. It is permissible, therefore, to hope that a correspondent, who writes to say that yachting and fishing on the upper waters of the Bure are in danger of speedy extinction, has been unduly alarmed. This correspondent calls attention to the fact that a Bill, lately prepared by the Yarmouth Water Company, will shortly be laid before Parliament, intended to enable the Company to turn the famous stream into the seaport's reservoirs and to acquire foreshores above Horning, sacred in the hearts of our holiday-makers to a thousand pleasant memories, and enshrined as beauty spots of surpassing picturesqueness on scores of canvases. It is pointed out anything which diminished the flow of the Bure would spoil much of the scenery beyond Wroxham, and "take the heart out of the Broadland district." Why, it is asked, if the needs of Yarmouth are pressing, cannot a sufficiency of wells be sunk in the neighbourhood of the town, where good water is to be found at a depth of 300 ft. to 500 ft.? Or, if a larger supply is absolutely essential, could not the city mains fix their intake, say, at Coltishall, where, apparently, the artistic affront would be less? But to turn the Bure into a water company's sluice and make famous Horning and Beeston into pumping stations is unthinkable."—*Daily Telegraph.*

Country in Town Exhibition.—"To show East Londoners what can be done to bring into the neighbourhood something of the beauty, freshness, and inspiration of Nature," an Exhibition will be held at the Whitechapel Art Gallery, from July 5 to July 19. It is to contain plants suitable for growth in London, beehives and other vivaria, pictures, models and plans for gardens, street-planting, parks, garden suburbs, &c. Lectures will be given during the exhibition, nurserymen will be asked to make displays of flowers, and railway companies to suggest places and routes for children's country visits. As admission is to be free, contributions are invited towards the expenses. The President of the Exhibition is Lord Carrington, President of the Board of Agriculture; the Chairman of the

General Committee, Mr. J. C. Medd ; the Treasurer, the Rev. Canon S. A. Barnet, Warden's Lodge, Toynbee Hall, Whitechapel, E. ; and the Hon. Secretary, Mr. Wilfred Mark Webb.

Nature Study at Swanley Horticultural College.—A course for women is announced for July 30 to August 11. The introductory lecture will be by Mr. A. D. Hall, Director at Rothamsted : Mr. Tabor and Miss Hibbert-Ware will lead combined excursions for the study of trees, birds, insects and pond-life : Mr. Wilson will lecture on the geology of the districts visited : Miss Agar will give garden lectures and demonstrations on the care of school gardens ; and Miss Dawson, demonstrations in dairying and poultry-keeping. Details can be obtained from the Principal.

SELBORNE SOCIETY NOTICES.

[Note.—All Announcements with regard to Future Meetings of the Central Society or Branches will be found together at the end of these Notices.]

New Members.—*Central Society.*—The following members stand for election : Mrs. Bond ; Miss M. S. Hagen.

Blackburn Branch.—R. Ashton, Esq. ; A. M. Broadbent, Esq. ; Fred. W. Duckworth, Esq. ; Robert J. Howard, Esq. ; J. Hunter, Esq. ; F. H. Peachell, Esq. ; G. B. Pickworth, Esq. ; D. John Preston, Esq. ; E. H. Twelvetrees, Esq. ; Richard Wilson, Esq.

Hammersmith Branch.—W. Clarkson Birch, Esq. ; Stanley T. Cave, Esq. ; Miss C. A. Collins ; Miss Louisa Copland ; R. W. Gair, Esq. ; F. P. Lawson, Esq. ; George Savary, Esq. ; Harry J. Veitch, Esq. ; John Wiltshire, Esq.

Hampstead Branch.—Miss Ethel Davis ; Miss Olive Karslake ; Neville Kingston, Esq., F.Z.S. ; W. Hele Payne, Esq.

Subscriptions.—The Council has pleasure in acknowledging subscriptions of greater value than 5s., from the following members : Miss M. S. Hagen, 10s. ; J. H. Masters, Esq., 10s. ; W. E. Milne-Redhead, Esq., 7s. 6d.

Election of Officers.—At the Council Meeting, held on March 27, the following Officers were elected for the coming year : Dr. Dudley Buxton, Chairman ; Mr. J. L. Otter, Honorary Treasurer ; Mr. Wilfred Mark Webb, Honorary Secretary ; Professor Boulger, Editor ; and Mr. H. H. Poole, Honorary Librarian.

New Branches.—At the same meeting warrants were signed constituting new branches for Hammermith and Fulham (Honorary Secretary, Mr. C. W. Cooke, Albert House, 11, Cassidy Road, Walham Green), and for Blackburn (Honorary Secretary, Mr. A. M. Broadbent, 5, St. Silas Road, Blackburn).

New Junior Branch.—A warrant was also signed empowering Mr. E. Newall Tuck to form a junior branch at the Chippenham Secondary School.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings of May 14 and June 18, for the purpose of issuing books to members.

The Hon. Librarian has pleasure in announcing the following additions to the Library, all kindly presented by the Editor : "Darwinism and the Problems of Life," by C. Guenther ; "Natural History Essays," by G. Renshaw ; "More Natural History Essays," by G. Renshaw.

WINTER MEETINGS OF THE SOCIETY.

Saturday, March 17.—Ironmonger's Hall, Fenchurch Street, was visited by about eighty members, who were received by Mr. Bertram Stedall, one of the Wardens, and Mr. Edward H. Nicholl, the Hon. Librarian to the Company, this latter gentleman acting as guide. In the Court Room Mr. Nicholl gave a brief but interesting sketch of the Company's history. It was founded in 1300, when complaint was made to the Mayor and Aldermen of London, by dealers in iron, of defective work brought to the City by the smiths of Kent and Sussex. The Ironmongers were noticed as a guild in 1363, and in 1456 obtained a grant of arms, and seven years later the Charter, which was shown and is still in excellent preservation. This Charter was confirmed by Philip and Mary in 1558, probably for no other purpose than to extract money. Charles II. compelled the surrender of the Company's rights, which were restored in 1688 (on payment of a heavy fee) by the notorious Judge Jeffreys, whose note commanding the attendance of the Master and Wardens was exhibited. To satisfy Henry VIII.'s demands for money in 1523 the Company had to sell or pawn all its plate.

The Court Room, with its beautiful carving and decoration, its magnificent fireplace and many interesting portraits, was thrown open for inspection, and the Company's collection of plate and ancient muniments was also displayed. The "Presentment Book," really the apprentice roll, started in 1680, is still in use.

After tea, which was provided by the Company and was served in the vestibule, a hearty vote of thanks to the Company for its kindness and hospitality, and to Mr. Nicholl for his valuable services as guide, was duly accorded.

March 24.—A very interesting visit was paid to the Horniman Museum on this afternoon, when Dr. Harrison and his assistants were good enough to conduct twenty-eight members over the building and point out many particulars in connection with the exhibits, which are being rearranged in a way which brings out their true value.

The development and improvement of weapons, for instance, is illustrated by one series of specimens, and the more peaceful arts of basket-making, cloth-weaving and so on, by others; while there are further exhibits tracing the evolution of ornament. The gallery, full of aquaria containing marine and fresh-water organisms, proved very attractive, as did also the museum lecture—given by Mr. Edward Lovett, the well-known student of survivals, on "Dolls," which the party was privileged to attend. The lecturer showed slides from photographs of dolls brought from all parts of the world, some of which had a bearing on religious questions, while others, as may be imagined, were merely produced for the amusement of children. The thanks of all who were present are due to Dr. Harrison, his assistants, and Mr. Lovett, for a very enjoyable visit.

Saturday, April 7.—By the kind permission of His Grace the Duke of Northumberland, a party of eighty-four, under the leadership of Professor Boulger, were able on this afternoon to visit the celebrated arboretum of Syon House. Favoured with exquisite weather, the party traversed the grounds from the Brentford to the Isleworth entrance, pausing ever and anon before one or other of the exceptionally fine specimen trees, especially the lofty Bald Cypresses (*Taxodium distichum*) from the Mississippi, which here develop the "knees," or ascending aërating roots, characteristic of their natural habitat, the large Walnuts and Fulham Oaks (*Quercus Cerris Fulhamensis*), the ancient Mulberries, dating most probably from the time of William Turner, physician to the Protector Somerset, and the magnificent Cedars of Lebanon, the largest of which was probably planted at the close of the 17th, or very early in the 18th century.

At a convenient spot Professor Boulger gave an account of the history of the Convent, of William Turner, the most interesting personage associated with the spot, and of the arboretum.

In 1414, Henry V. founded a convent of Bridgetines, probably at Twickenham Park. In 1432, Henry VI. permitted its removal to the present site, subsequently bestowing upon it the manor of Isleworth. In 1532 the convent was suppressed for "harbouring the King's enemies" and being accomplices of the Maid of Kent. Katherine Howard was detained there for three months

prior to her execution, and Henry VIII.'s body rested there one night when being conveyed for burial to Windsor. In 1547 Edward VI. granted the property to his uncle, the Protector Somerset, who built the shell of the present house.

William Turner, "the father of English botany," a native of Morpeth, graduate of Cambridge, and the friend of Ridley and Latimer, in 1538 published his "Libellus de re herbaria novus," a quarto pamphlet, the now unique copy of which in the British Museum has been reproduced in facsimile, a copy being shown to the party. After suffering imprisonment, Turner, in 1542, left England, studied under Luca Ghini at Bologna, where he probably graduated as M.D., and became acquainted with Gesner. Becoming physician to Somerset, we read that he had a garden of his own at Kew, and, in 1548, he published his "Names of Herbes" in English, dedicating it to Somerset from Syon. A reprint of this rare book, edited by Mr. Britten, when living at Isleworth, was also shown. Turner received various ecclesiastical preferments before being ordained, and in 1550 became Dean of Wells. During Mary's reign he again left England, the first part of his folio Latin Herball being published in London in 1551, but the second and third parts at Cologne, in 1562 and 1568 respectively. Turner died in London in the year last mentioned, and was buried in St. Olave's, Hart Street. In Aiton's *Hortus Kewensis*, the introduction of numerous trees and shrubs is attributed to the year 1548, and, by implication, to Turner, including the Pomegranate, Bay, Almond, Apricot, Rosemary, Hyssop, Old Man, Mulberry, Fig, Oriental Plane, Spruce, Savin and Cypress. Of these the Mulberry was very probably first planted by Turner at Syon.

After Somerset's attainder, King Edward granted Syon to Northumberland, who was beheaded in 1553. Sir Henry Sydney was then made Keeper of the Park and Woods; but in 1557 the Convent was restored and re-endowed, only to be again dissolved by Elizabeth, who, in 1560, made her kinsman, Sir Francis Knollys, Keeper for life. In 1604 the estate was granted to Henry Percy, Earl of Northumberland; but he was imprisoned till 1621 for alleged complicity with the Gunpowder Plot. Under his successor the house was altered and repaired, under the direction, it is said, of Inigo Jones. In 1646 Algernon, Earl of Northumberland, was empowered to remove King Charles's children to Syon on account of the plague in London; and during the autumn of the following year Charles frequently came here from Hampton Court to see them. The property then passed into the female line, Elizabeth Percy marrying Charles, Duke of Somerset, who lent the house for some time to the Princess (afterwards Queen) Anne; and from them it was inherited by Hugh Smithson, the first duke of the present (1766) creation.

The north facade of the House was designed by Adam and the laying out of the grounds was largely the work of "Capability" Brown.

In 1838 Loudon dedicated his *Arboretum et Fruticetum Britannicum* to the then duke, and no less than a hundred species of trees are figured in the plates of that work from specimens at Syon, their measurements at that date being also recorded. *Magnolia acuminata*, for instance, was then 49 feet high, *Sophora japonica*, introduced in 1763, 57 feet, a Walnut, 79 feet, *Corylus Colurna*, 61 feet, the largest Cedar 72 feet high, and 8 feet in diameter, with branches spreading 117 feet, and the Deciduous Cypresses from 60 to 70 feet high.

As these trees were seen by the visitors, it was possible to form an estimate of their growth during the last seventy years.

NEWS FROM THE BRANCHES.

Birmingham and Midland Branch.—On April 3, Mr. T. H. Russell, F.L.S., delivered an interesting lecture entitled "Our Woodland Trees, their Leaves and Fruits," in the Exhibition Hall of the Botanical Gardens, Edgbaston, before a large and appreciative audience.

The lecturer dealt with some of our common trees, with especial reference to their leaves, and incidentally to the fruits of certain of them. Thirty kinds of trees and shrubs to be met with in the lanes and woods of the country, including such well-known instances as the Oak, Ash, Sycamore, Maple, Beech and Lime, and also some that are less familiar, were thus treated. The provision made by

the tree for the fall of the leaf in autumn ; the importance of trees in the struggle for existence of such winged fruits as are to be met with in the Lime, the Maple, the Hornbeam ; the functions performed by the leafy stipules, the services rendered to the leaf by the ribs and veins, and the different forms of leaf-veining as illustrated by the "pinnate venation" of the Alder, the "palmate venation" of the Sycamore, and variations in these as exemplified in the "looped" veining of the Walnut and the "arched" veining of the Dogwood, were touched upon. The lecture was illustrated by forty-four lantern slides made from original black and white drawings by the lecturer.

The chair was taken by Mr. W. F. Haslam, F.R.C.S., and at the close a cordial vote of thanks was accorded to the lecturer, having been proposed by the Chairman, and seconded by Mr. Richard Peyton.

FORTHCOMING EVENTS.

Annual Meeting.

The Annual Meeting, at which the Report and Balance Sheet will be presented to Members, and at which the President, Vice-Presidents and Council will be elected, will be held at 20, Hanover Square, on May 30, at 8 p.m.

Annual Conversazione.

As announced elsewhere in the Magazine, the Annual Conversazione will be held, by the kind permission of the Civil Service Commission and His Majesty's Office of Works, in the offices of the former at Burlington Gardens, on May 25. The President, Lord Avebury, will deliver an address, and there will be a lecture and exhibits, as usual. Members of the Central Body will receive invitations and a provisional programme by post ; those attached to Branches must apply at once for tickets to their local Honorary Secretary, so that information as to the number required may be sent to the Honorary General Secretary, who will then obtain them.

Members may obtain tickets for their friends at the nominal price of 1s., on application to the Local Honorary Secretaries or to the Honorary General Secretary.

Committee Meeting.

Monday, May 14.—Publications Committee at 5.30 p.m.

Excursions.

Central Body.

Saturday, May 5.—Ramble in Epping Forest. Meet at Chingford Station at 3 p.m. Cheap return tickets, 1s. Trains leave Liverpool Street at 2.23 and Gospel Oak at 2.4 p.m. Guide, Mr. C. H. Cox.

Saturday, May 12.—Edgware, Elstree and Mill Hill. Train leaves Moorgate Street (G.N. Ry.) at 1.54, King's Cross (Suburban) 2.5, Finsbury Park 2.14. Take single ticket to Edgware. Fare from King's Cross, 8½d. *Change at Church End, Finchley.* Tea at "Plough Inn," Elstree. Guide, Mr. Ernest A. Nash.

Saturday, May 19.—Berkhamsted, Ashridge and Aldbury. Meet at Berkhamsted Station on arrival of train leaving Euston at 2.20 p.m. The ordinary return fare is 4s. 2d., but if a sufficient number of members write to the Excursions Secretary before May 14, signifying their intention to join in this ramble, a special reduced fare of 2s. 11d. will be arranged (tickets issued at Euston only, meet Mr. E. A. Nash in the Booking Hall). Tea in Ashridge Park. Return trains at 8.8 and 9.14 p.m. Guide, Mr. W. Percival Westell, F.R.H.S., M.B.O.U., who will read a short historical paper.

N.B.—At Berkhamsted there are ruins of an ancient castle ; Ashridge Park, the seat of Earl Brownlow, is famous for its deer and trees, and Aldbury is a quaint village where the stocks are still standing.

Saturday, May 26.—Ramble round Leatherhead and the Valley of the Mole. Meet at Leatherhead Station at 3 p.m. Trains leave London Bridge (L.B. & S.C. Ry.) at 2 p.m., and Victoria (West End, L.B. & S.C. Ry.) at 12.55 p.m. Cheap return tickets, 2s. Guide, Mr. A. B. Wilkinson.

Saturday, June 2.—No ramble, on account of the Whitsuntide holiday.

Saturday, June 9.—Details will appear in the June number.

Projected Arrangements.—It is hoped that on July 7 Dr. Willson will lead a ramble in the Weybridge district, that on July 21 Mr. Westell will again act as guide, and that on July 28 Mr. Webb will conduct an excursion, most probably to Iver Water Splash.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Hon. Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

Branches.

Abinger and Shere.—A walk will be taken on Saturday, May 19, from Gomshall Station to Abinger Common, under the guidance of Professor Boulger, and Mrs. Gilbert Redgrave kindly offers her house as the centre for tea. The meeting place will be Gomshall Station at 2.34 p.m. and any Selbornians not belonging to this branch who wish to join the party are requested to give notice a week beforehand to Mrs. Redgrave, Grove Dale, Abinger Common, Dorking.

Ealing.—Members of the Ealing Branch may, by permission, attend the excursion of the Ealing Scientific and Microscopical Society to Eton College on Saturday, May 12. The party will go by the train leaving Paddington at 2.30 and calling at Ealing Broadway at 2.43. Cheap tickets may be obtained. Those who desire to take part in the excursions should remit 2s. (to cover the cost of tea and additional charges) to the Hon. Secretary of the Ealing Scientific and Microscopical Society, Mr. F. MacNeil Rushforth, at 133, The Grove, Ealing, W., not later than Tuesday, May 8.

ANSWERS TO CORRESPONDENTS.

Mrs. Needham.—The shrub with narrow, pointed leaves in opposite pairs is *Phillyrea angustifolia L.;* that with broader leaves and white flowers is *Myoporum acuminatum*, Br., introduced from Australia; the somewhat downy plant with withered flowers is a *Cistus*, possibly *C. monspeliensis;* and the other plant is *Helleborus fœtidus L.* Please number your specimens another time.

W. M. Scott.—Such "fasciations" as those you send are not uncommon in the Dandelion. See Masters's "Vegetable Teratology," p. 17.

Rev. W. D. Wood Rees.—The Black Currant buds seem to be affected with the Currant Mite, *Eriophyes ribis*, Westw. See *Journ. Linn. Soc. Zool.*, xxviii., 366.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 198. JUNE, 1906. Vol. XVII.

PRESIDENTIAL ADDRESS.

By the Right Hon. Lord Avebury, D.C.L., F.R.S.

Delivered May 25, 1906.

I have in the first place to congratulate the Society on having come of age. This in itself shows that it fulfils a real want. Unquestionably the love of Nature is stronger, more general, and more intelligent, than it used to be; and if on the one hand this originated the Society, on the other hand we may fairly claim that the Society has done much to open the eyes of our countrymen and countrywomen to this great source of interest and happiness.

But the lapse of time brings losses with it. This year three of our Vice-Presidents have left us. Sir Mountstuart Grant Duff, Lord Mansfield and Mrs. Brightwen, whose writings have done so much to carry out the objects of the Society.

The Society now numbers over 1,800 members, and several new branches have been formed during the year.

The summer excursions have been very successful, mainly through the excellent management of Mrs. Percy Myles, who has for the last two years been ably assisted by Mr. Poole. It is a great loss to the Society that Mrs. Myles feels herself unable to continue the work. I am sure that I shall be expressing the wishes of the Society in offering her our thanks.

Mr. Poole has been good enough to organise also our winter meetings.

Several of our members are taking a prominent part in the Country in Town Exhibition.

Our Ealing Branch has secured an enclosure in which birds are effectively protected and were enabled to rear several hundred broods. This is a good example which might be carried out with advantage elsewhere also.

Nature Notes continues to be very interesting, and the many complimentary notices in the Press must be very gratifying to Professor Boulger, the able Editor.

Professor Boulger also brought the protection of plants before the British Association, and it was agreed to recommend the issue of a circular by the Association to teachers, and the preparation of a "Reader" for schools.

I should, however, occupy too much of your time if I was to enumerate, however briefly, the work of the past year under our good Secretary, Mr. Webb.

The influence of the Society is much needed. We hope and believe that we have effected something, but much still remains to be accomplished. The *Journal of Botany* justly deplores "the wanton destruction of roadside beauty which now prevails throughout the entire country. The disfigurement of trees and hedges, the continual paring of roadsides and scraping of hedge bottoms, the parings and scrapings in almost every case being thrown on the hedge banks or what remains of the grassy borders of the roads." Thus not only wasting the ratepayers' money, but really disfiguring the country.

The sale of feathers still flourishes. On August 4 no less than 238 packages were sold. Of Bird of Paradise skins, there were no less than 5,564, and others included the so-called Ospreys, Parrots, Orioles, Tanagers, Trogons and even Humming Birds.

Ladies seem to prefer the authority of shopkeepers, who assert that the so-called "Ospreys" are artificial, to that of ornithologists, who know that they are real; that they are only developed at nesting time, and that they involve the starvation of the young birds, so that they can only be obtained by an act of heartless cruelty. On this account they have been given up in the army. I have seen surprise expressed in the Press that young and pretty girls are more cruel than the War Office. This, however, is not, I think, correct. I have observed that it is not the young and pretty girls, as a rule, who wear them.

The gamekeepers are, perhaps, even worse enemies of birds than ladies. In fact they only recognise Partridges, and Pheasants as worthy of the name. Owls and Hawks it is almost impossible to induce them to spare. Yet these are very useful. Mr. J. H. Gurney reports in the last number of the *Zoologist* that in the pellets in an Owl's nest, which he had just examined, he found the remains of fourteen rats, thirteen shrews, and twenty-five mice!

But while we are anxious to save animals from all unnecessary suffering and to preserve plants, we also believe that our principles add much to the charm, the happiness and the interest of life.

The ancients looked upon the earth as something unique, the centre of the universe: *we* know that it is a small planet, revolving round a small star, one of many millions of heavenly

bodies; and yet what infinite mysteries it comprises, what immeasurable problems it opens up, with what innumerable beauties it is adorned! It may be true, as Rousseau asserts, that—

> "Le monde réel a ses bornes, le monde imaginaire est infini";

but the limits of the universe, if indeed there are limits, are at a distance so infinite as to be virtually non-existent. Not only, indeed, our comparatively little Earth, but the several parts and particles of it, even the motes in the sunbeam, are practically infinite. Our senses are sadly limited and we really do not know that we are not living like the blind reptiles of some great cave in the midst of wonders and beauties which we have no organs of sense to perceive.

We are apt to think that every one recognises beauty when he sees it, but that is a complete mistake. Many stand both blind and deaf in the great temple of Nature. In the whole of classical literature there are hardly any references to the sublime and transcendent beauty of sunsets, which is all the more remarkable from the pre-eminent place which according to Max Müller and other great authorities, the dawn held in the origin and development of Aryan mythology.

Goldwin Smith denied that the lily of the field was more beautiful than Solomon in all his glory.

Lewis Cornaro, who lived to be over a hundred, and wrote his "Earnest Exhortation to a Sober Life" when he was ninety-one, attributed his wonderful health to his temperance and moderation. He enjoyed, moreover, he said, not only one, but "two lives, one terrestrial, which I possess in fact, the other celestial, which I possess in thought." But he tells us, "I never knew till I grew old that the world was beautiful." Even the Greeks, with all their keen sense of beauty in art, do not seem to have appreciated the still more exquisite beauty of Nature. And yet, though none of us can fully realise, and few indeed can even feebly recognise, the wonder and beauty of the world in which it is our privilege to live, still to many of us one look up to Heaven—the blue sky, or the brilliant stars—one glimpse of a lake or sea, one view up to or down from a mountain, and the dust of the highway of life vanishes away. That must, indeed, be a dark perplexity or a grievous pain which a fine day in the open air will not do much to lighten or relieve.

Moreover, the benefit does not cease with the day. This is not a case in which, to use Thomas à Kempis's words, we have to think

> "Not of the lover's gift
> But of the giver's love."

It may be true, as Wordsworth tells us, that

> "Nothing can bring back the hour
> Of splendour in the grass, of glory in the flower."

Still memory is much, and reflection has a special beauty of its own.

Indeed, how any one with eyes in his head can ever be dull is a mystery. The Emperor Akbar well said that "Broad indeed is the carpet which God has spread, and beautiful the colours which He has given it."

Moreover, the parts of Nature which are most beautiful are just those in which she has been left to herself, which man has neither arranged nor deranged. My old friend, W. R. Greg, wrote one of his charming essays "On the Special Beauty of Ruin and Decay." It is not, however, the ruin or decay in themselves; it is that the touch of Nature embellishes and glorifies even the most noble productions of man.

We of the Selborne Society pre-eminently recognise how intensely the reverent study of Nature has added, and will add, to the happiness of life. We are devoted to the country—to *our* country of course, but especially to *the* country.

It appeals not only to our senses, but to our reason. One of the main charms of Nature is the great mystery of existence. Matter, it now seems, is not material after all, but movement. All is little, says Joubert, and nothing is much. "La Matière est un apparence, tout est peu, et rien est beaucoup."

And yet every stone is a problem, or rather a series of problems. Every flower is a marvel, every animal a miracle, and man himself the greatest of all: we know little about the body, still less about the mind; and least of all what is the relation of the body to the mind; and yet they make you and me.

"L'homme," says Pascal, "est à lui même le plus prodigieux object de la nature; car il ne peut conçevoir ce que c'est que corps, et encore moins ce que c'est qu' esprit; et moins qu'aucune chose comment un corps peut être uni avec un esprit; c'est là le comble de ses difficultés, et cependant c'est son propre être."

In this world of storm and stress, of wars, and rumours of wars, of Parliamentary elections and political excitement, the study of Nature brings peace to the heart. Thomas à Kempis tells us that he had sought everywhere for peace, but found it not, save in a little nook (his cell) and a little book. He did not, however, try the study of Nature.

"Nature," said Goethe, "has placed me in this world, she will also lead me out of it. I trust myself to her. She may do with me as she pleases. She will not hate her work. I did not speak of her. No! what is true and what is false, she has spoken it all. Everything is *her* fault, everything is *her* merit."*

Books afford us practically inexhaustible treasures of interest, which no doubt take some finding, but the splendid secrets of Nature, as Shelley tells us, she will not tell to those who cannot question well—still less to those who do not love her well. We do.

* Goethe, "Maxims," p. 213.

Art and music and literature are a source of pure and intense enjoyment. But yet we are happy in the glorious faith, that Nature truly is

> "Better than all measures
> Of delightful sound,
> Better than all treasures
> That in books are found."

THE EGRET'S ROYAL CHARTER.

HENCEFORTH the milk-white heron shall have rest,
No more the innocent cloud of wings need fly—
Too brave to leave their children tho' they die,
Too weak to plead with hands by greed possessed;
No more the brides by love and beauty dressed,
'Reft of their plumes, in agony shall lie
Helpless, and hear the unmothered nestlings cry
And know they faint, sun-smitten on the nest.

For she, our Queen of tenderness and grace,
Takes with her royal will the poor bird's part.
Pride now, before her hecatombs of dead
For murder's millinery, veils her face,
Nor dares to deck with doom her wanton head,
And heartless fashion finds at last a heart.

H. D. RAWNSLEY.

LONDON BIRDS IN JUNE.

BY the end of May, the heyday of the London bird season is reached, and the eager ornithologist need not stir far from his dwelling in order to follow his study. A month ago, sharp eyes might have seen stray wheat-ears, willow wrens or redstarts on their migration journey, and well attuned ears might have heard at nightfall the faint cries of passing Hirundines and warblers. These experiences may be partly repeated in autumn. Thus, in the garden hard by, with 1,400 trains passing the spot during the twenty-four hours, a returning chiffchaff sang for some minutes one morning last September. But it is mainly to settlers and stragglers that one turns in June.

A few records may serve to show what prizes may reward the enthusiast. The Archdeacon of London some time ago told the Society for the Protection of Birds that a cuckoo sang in Portman Square in 1899. For many years Mr. A. Holte Macpherson has compiled for NATURE NOTES a list of birds

annually seen by himself in London. Taking such a house-locked oasis as Lincoln's Inn, we find that it was visited in 1889 by a jay and a yellow-hammer, in 1892 by a willow wren, in 1894 and 1896 by a chaffinch, and most notable of all, in 1897 by a nightingale. A competent observer had a quail in his Kilburn garden during the whole of a May afternoon in 1899, a second ornithologist saw two green woodpeckers in Cadogan Gardens, whilst a third, an old French chef, noticed a wheatear on Clapham Common. "I know it well, sir, it is a fine bird for the table, believe me, it is second only to the ortolan." "For the table," alas! but how can we argue, when such a naturalist as John Burroughs says: "First find your bird; observe its ways, its song, its calls, its flight, its haunts; then shoot it (do not ogle it with a glass), and compare it with Audubon?" Excellent advice if it stopped at the word "haunts."

A fortnight ago came the news that a blue tit was building in a lamp-post in a street near Wandsworth Common. The householders there can now hear the morning song which Morris's schoolboy declared was a line from the Latin grammar, "Me, te, se, præter que re re." Not at all uncommon is the blue tit's greater cousin, the black-throated, lemon-breasted great tit, whose piercing, swinging notes recall the sharpening of a saw. Almost any evening he may be heard in the shrubberies on the south side of Clapham Common. Indeed, this bold bird once visited the same garden where the chiffchaff rested awhile. If we care to go a little further afield, other rarities are awaiting us. Shall we cross to Hyde Park to look for the reed warbler and wood wren, or to Greenwich to see the sedge warbler and kingfisher? If we care to journey to Chingford, we may find the golden crested wren. Nearer, at Wimbledon Common, the nightingale may be heard continually, the blackcap and garden warbler sing by the mere, troops of long-tailed tits pass by the Beverley brook, and at night the goat-sucker purrs and "through the still gloom protracts his chattering song." In which particular corner half a score goldfinches were lately seen shall not be told, but of the breeding place of sand-martins near the station at Clapham Junction there need be no mystery; no stranger is permitted on the line to pry into the holes in the masonry of the embankment.

Even in the parks, not many nests are accessible to the town resident, for most birds prefer quiet nooks where the public may not wander. When nests are found, we should determine the species of owner by those alone. If eggs are present, all the better, the matter is settled. But if these conditions are not available, we must identify the bird by its flight, its shape, its colour, its cry and song. How many Londoners, for instance, have noticed that the cock sparrow has a black throat, and a narrow white streak over each eye, adornments which are wanting in his mate? Or, who, witnessing the figured flight of birds

across the Thames in January, 1898, was able to infer that they were wildfowl and not pigeons? Those semi-domesticated mallards, careering up and down the river, with their outstretched necks and closely tucked feet, how their movement differs from the leisurely sailing of the gaunt heron which is making for the heronry at Richmond! The soft, noiseless, moth-like flight of the nightjar is in strong contrast with the noisy flaps of the ring-dove of St. James's Park. The switchback motions of the pied wagtail—the bird which last year laid two dirty grey-brown eggs in the burial ground of Old Battersea Church—how unlike the heavy, laboured progress of the moorhens of our ornamental waters! The sea-gulls at Westminster Bridge pursue a tortuous course, and gracefully fold their wings before alighting on the water. The finches rise and fall as if on a choppy sea, starlings glide, kestrels hover and circle. The whirr of the partridge, the zigzags of the snipe, the shuffling of the hedge-accentor, are further examples of distinctive flight.

Rare nests are, however, to be discovered sometimes. Within two miles of this busy centre, the writer last year found a willow wren's nest at the foot of a gorse bush. It was artfully concealed, and probably the young would have been reared safely, had not their cries betrayed them. Fortunately, a photograph was secured before the loafers of the Common destroyed the nest and its contents. Another pair of the same species eluded the destroyer, and reared at least three or four fledglings. Finest sight of all was the nest of a meadow pipit at Wimbledon. It was artfully hidden by a little tussock of grass, and lying in it was a cuckoo's egg harmonising in colour with those of the host bird. A bullfinch's nest and eggs, in spite of close watching, were destroyed at Wimbledon, in June, 1903.

Often the observer has to rely mainly upon the song of the bird. He becomes familiar with the *kae* of the Richmond jackdaw, the laughing "yaffle" of the Wimbledon woodpecker, and the *rark, rark* of the Epping jay. Once heard, this noise, as of calico being torn, lingers in the memory. But how can we best remember the different songs? Mr. C. A. Mitchell has attempted to express some of them in musical notation, but Mr. Warde Fowler, musician and ornithologist, says that this is impracticable, for so far as he "can judge, there is neither time nor rhythm nor scale" in the melody of birds. The plan adopted by Dr. C. L. Hett is admirable, he constructs a syllabled outline of the song. Where well-worn renderings are known, the learner should seize on these and mentally accompany the bird's ditty, in other cases he should make up the syllables for himself. The chaffinch plainly says "Tol-de-rol, lol, chickwee-ee-do"; a slow note or two, then two or three rapidly delivered, and a twist at the finish. Incidentally, it may be said that a chaffinch joined the sparrows in St. James's Park a few weeks ago. The nightingale, common near London, has a French paraphrase for his performance: "Le bon Dieu m'a donné une

femme, que j'ai tant, tant, tant, tant, battue; qui s'il m'en donne une autre, je ne la batterais plus, plus, plus, plus, qu'un petit, qu'un petit, qu'un petit." Here we get a quick succession of liquid notes, tumbling over each other, to be followed by a pause of some seconds; then there comes a plaintive, piping whistle which puzzles the astonished listener. The willow wren may be heard keeping company, and "chiming" with its fellows thus: "Till-tell-true, junk, jink, pit, pet, pip, pip, pip, pee-oo." The yellow-hammer cries aloud, and perhaps not always in vain, for "A little, little bit of bread and no-o-oo chee-eese." The blackcap or mock nightingale (a silly name) has bold rich notes somewhat like those of the robin. The whinchat of the furze bush makes a sound as if two stones were being struck together, "Oo-tac, oo-tac, tac, tac, tac." Its next of kin, the resident stonechat, says wi-chick, wi-chuck. "Who? he? 'tis he! 'tis he!" may well represent the song of the grey wagtail. The cleverest imitation is probably Macgillivray's translation of the notes of the skylark: "Up in a lift go we, te-hee, te-hee, te-hee! There's no cobbler on the airth can mak' a shoe to me! why so? why so? why so? Because my heel is as long as my toe." Such are some of the melodies which may be heard in suburban districts, north or south; nay, even in places which are scarcely to be called suburban. Passing by Wandsworth Gaol, there is forced upon the mind the bitter truth, charged with grimmest irony, that the prisoners may night and morning hear therefrom the unimpeded songs of no contemptible portion of the British avifauna.

Battersea, S.W. WALTER JOHNSON.

A YEAR ON THE WAR-PATH.

HE was a big, handsome fellow, equipped from head to foot in olive-black armour.

"*Hydrophilus*, the favourite vegetarian," said our friend, as he introduced the new arrival to us, whereupon we expressed pleasure at meeting once more a member of this most highly respectable family.

"He shall have a home worthy of the irreproachable name he bears," we remarked, as we dropped him into our favourite aquarium, and then an indefinable something in his manner of swimming caused a momentary suspicion to dart through our mind, and made us ask, "You are sure he is *Hydrophilus?*"

"Oh, yes," was the confident answer, which dispelled all doubt; "Look at his smooth coat of mail! That carnivorous relative of his of whom you are thinking, has ribbed armour."

The summer previous, we had brought from a pond in the country two small beetles of the family of *Hydrophilidæ*, and had found them most interesting. They were perfectly harmless, and being strict vegetarians, they lived in quiet harmony with the other creatures in the aquarium. Then their undersides, silvery

with filmy air-bubbles, made them very pretty objects in the water. One day we noticed one of the beetles busy at work just under the surface of the water, seemingly trying to spin a spider's web, and a few hours later the web had developed into a little silken oval-shaped nest, rather larger than a good-sized pea, and in this the beetle had deposited her eggs.

Unfortunately the aquarium became slightly tilted, and this being unobserved till too late, the nest and its contents were left high and dry above the water, and spoilt. We cut open the nest and found that the eggs, which were glued together in great regularity, were quite withered. A small portion of the nest material placed under the microscope showed the silken threads of which it was composed, all meshed and netted together, somewhat like the texture of our toilet sponges, only looser and coarser. A few days after the accident, a second nest was built, whether by the same beetle or not we hesitate to say. The family likeness is so close that it does not admit of much distinction between individual members; but, as if the fate of the first nest had conveyed a lesson, the second was built about an inch below the surface and attached to the glass as before. All went well for a few days and then a great blundering snail, a *Limnæa*, came browsing along, and clumsily pushing the dainty silken cradle before him detached it from its moorings. For a time the buoyant little ark floated on the surface; but finally it became water-logged, and sank to the bottom of the aquarium, and we waited in vain for further development. The two beetles died shortly after nest-building, as though nest-building consummated their life-work. This may be so, but we do not know. The renewal of an acquaintance with this interesting family of nest-building beetles we had often desired, so when our friend presented us with a giant *Hydrophilus*, we were more than gratified.

The aquarium in which we placed him was dense with water-weed and rich with microscopic organisms. We should hardly like to say how many districts and how many ponds the life in that aquarium represented, for its contents had been the gathering of years. Besides microscopic specimens, there were snails of all sizes belonging to the genera *Limnæa* and *Planorbis*, some pearly white bivalves of the genus *Sphærium*, caddis larvæ, water-hogs (*Asellus*), water-scorpions (*Nepa*), leeches, small red worms and other creatures.

A triton and two smooth newts had been then quite lately introduced, and all three were very tame and would come round to us to get their food when we tapped on the glass of the aquarium.

On that side of the glass facing the setting sun was encamped a numerous colony of green hydras, the single parent of which we had brought from a stream bordering a grouse moor in Midlothian. On the Friday when we took the dipping in a specimen tube there was *one* hydra; on the following Monday this had budded, and produced children and grandchildren to the number of *seven*. After this we gave up counting individuals, or hazarding

relationships, and were content to see the colony grow, and to watch the movements of the graceful living fringe through a pocket lens.

For some days after the introduction of the new water-beetle all seemingly went well, until one morning the triton—"Pa," we called him—failed to appear to take his meal. The cover of perforated zinc happened to be slightly disarranged and we concluded that he had taken this chance to escape, and expected at some future date to find his desiccated remains in some isolated corner; but expected in vain. Next the two smooth newts were missing. Again we blamed the cover and took means, now that the stable was empty, to so fix the perforated zinc as to prevent like escapes in the future.

A few mornings later we noticed a number of snails crawling up the glass out of the water. Some had reached and were resting on the underside of the perforated zinc, and others were poised on some floating pieces of cork. We put them all back into their natural element, and as we did so, noticed our dark-coated giant hanging head downwards, his tail just protruding above the surface of the water, taking in a new supply of air. We gave him a playful touch and he dived hurriedly, taking a big silvery bubble with him. The following morning at breakfast time, many of the snails seemed again bent on a pilgrimage, and as we wondered, we became aware of an ominous "*crunch*," "*crick*," "*crunch*." We removed the cover and looked in, and there was the false *Hydrophilus*, revealed to us as the voracious *Dytiscus*. He had firm hold of a large *Limnæa* with his front prehensile legs, and in a most systematic manner was breaking the shell with his mandible, as a parrot snaps the shell of a Brazil-nut with his beak. After he had gorged the juicy mollusc, only the columella, with some jagged portions of the shell adhering, was left. The repast over, he all unconcernedly turned a somersault and ascending, tail uppermost to the surface of the water, took a rest and airing of fully two hours' duration. When we investigated matters we found the sand at the bottom of the aquarium covered with a layer of shell remnants. Was it a sense of danger made those other snails try to seek a place of safety? We gave them credit for this wonderful instinct of self-preservation and put them with our gold-fish, where they showed no further signs of disquietude.

The snails, which appeared satisfied with their lot, we left with *Dytiscus*. We had no wish to starve the warrior, only, had we been awake to his real character, we should have provided for him differently. After all, *Dytiscus* is not the only creature in the world with a partiality for living molluscs. We gave him some small pieces of fresh English beef, and so as to be able to remove any discarded portions, tied them on a thread. He hugged one small piece and sucked the juices from it, and then as though suspicious of the offering being other than home produce, treated the remainder with withering disdain. But we were both surprised and angry when we discovered that the

whole colony of hydras had been despatched. They were flourishing about an hour before we noticed their disappearance. He had evidently bided his time till the hydras had become a sufficiently large army to satisfy his maw, and had then enjoyed them as a salad.

As the food became less plentiful we supplied him with worms and large quantities of ant eggs. Of the latter he was very fond, would rise to the surface for them, clutch four or five in his mandibles, and then balancing himself in his favourite attitude, head downwards, demolish them with serious deliberation. He came to us in February, and in May another and smaller *Dytiscus* was presented to us. Judging he would be good company for his fellow, we introduced number two into the same aquarium. But number one could brook no rival. He darted after the new-comer in a most ferocious manner, and in the scrimmage which ensued death must have followed had we not separated the combatants.

In another and smaller aquarium we had isolated a stickleback of murderous tendencies. He had bullied three other sticklebacks most outrageously, chasing them with his spines all erect and biting them viciously until their lives were a burden. So with this fierce little brigand we put the poor ill-used *Dytiscus*, whom we could almost imagine to be trembling with fear, after his terrible encounter with the giant. But no sooner did he spy the stickleback than his courage returned and he declared war. The stickleback ducked and dived, but the beetle darted after him with lightning speed, determined to have his blood. Once more we intervened, separated pursuer and pursued, and fishing out the beetle put him into a small garden pond to rampage at his will.

On St. Valentine's day we found our giant *Dytiscus* floating dead on the water. What had killed him we do not know. Old age, perhaps. He had been with us just about a year. Now as he lies before us stiff and harmless, we wonder how we could have been so easily deceived. The one point by which we might have satisfied ourselves, is his slender and jointed antennæ. These should have unveiled the impostor, for the family to which *Hydrophilus* the vegetarian belongs have all clubbed or knobbed antennæ. Ribbed or smooth armour carries no significance, for both families may have either; but the antennæ are very safe guides. Of course it is very easy to find where one was wrong, after the damage is done. Three snails still remain in the aquarium. Verily, they must be tough old generals, and of no pleasant flavour, for *Dytiscus* to have spared them.

Except for the little mussels (*Sphærium*), which seem to have borne a charmed existence, the water once so full of life is as barren as if it had been carefully filtered. The bell-flower animalcules that fringed every leaf of *Anacharis* are gone, so are the *Cyclops*, *Daphnias*, *Stentors*, and water-bears. Even the predaceous water-hogs have vanished, and a patch of *Spirogyra*, which appeared and disappeared periodically in a game of hide-

and-seek, has not shown itself for months. Were the identity of that beetle to be demanded of him he might find it a problem as difficult to answer as the last survivor of the Nancy Bell in the "Bab Ballads." S. D. W.

LETTERS TO THE EDITOR.

Prehistoric Tombstones.

"F. G. S." is quite right: I referred to the Agglestone, near Studland, and now beg to thank him, and others, for calling attention to the error. On the only occasion when I might have examined this sarsen I was driven back by heavy rain. Misled by some guide-book or other, and connecting the Agglestone with other *holy*-stones, frequently menhirs, I was led to quote this block as an instance. Sarsens may, of course, be set up as menhirs, but the Agglestone, not being detached from the underlying rock, cannot be of this nature.

Walter Johnson.

Selborne Rambles.

Will you permit me to make a suggestion to guide the guides of the Selborne Society? I think they should remember, in the first place, that the Society is a Natural History Society. It is not a Society for the purpose of learning to walk at a good speed for two or three hours without stopping. I have sometimes heard it remarked that our walks are more of scrambles than rambles. There are, fortunately, some of our members who endeavour to check that propensity.

The Selborne Society is a Natural History Society, and to some of its members the greatest of its pleasures is to learn something, however small it may be, every time that they go out. It may be a little fact in botany, or ascertaining the habitat, peculiarities and changes of some common insect, or, it may be the acquiring the knowledge of the note of some bird, especially our migratory birds, with whose notes some of us, especially those of us who do not live entirely in the country, are not so familiar.

Another thing I should like to impress on those who are responsible for the arrangements is that the longest portion of the walk should, whenever possible, be taken after tea. After a short walk, not exceeding three miles, before tea, one enjoys the tea, is renovated by it, and is enabled to take a good long walk afterwards. On the other hand, if an exhausting walk is taken of six or seven miles before tea, as is sometimes done, there is no enjoyment in the tea, and it does not renovate and enable people to enjoy the walk after tea. Of course, in the autumn, in consequence of the short days, the walks have to be taken before tea in order to get light, but then they ought to be somewhat curtailed, but there is no necessity for this in the months of May, June and July.

Hampstead, May 21, 1906. Peter Hastie.

SELBORNIANA.

Conversazione and Annual Meeting.—We print in this number Lord Avebury's Presidential Address; but owing to the late period in the month at which our Conversazione and Annual Meeting took place, we are compelled to defer our full report of these two events.

Death of Mrs. Brightwen.—Never was the Selbornian ideal more thoroughly realised than by our valued Vice-President, Mrs. Brightwen, whose death we now have to deplore. Eliza Elder was born at Banff, October 30, 1830; and, her parents having died in her infancy, she was brought up by her uncle, Alexander Elder, one of the founders of the publishing firm of Messrs. Smith and Elder, at Streatham. In 1855 she married George Brightwen, a stockbroker, who died in 1883, leaving her a life interest in the small but beautiful estate of The Grove, Stanmore, partly in Middlesex and partly in Hertfordshire. Here she devoted herself to her garden and her many and varied animal pets, which she studied with minute attention and a catholic interest and not merely with humanity and wonder. Not till 1890, when she was sixty years of age, did Mrs. Brightwen publish her first book, "Wild Nature won by Kindness," of which upwards of twenty thousand copies have been sold; but a paper by her on "Feeding Birds in Winter" appeared in *The Selborne Magazine* for February, 1889. She had been a Vice-President of our Society since 1890, and was also a Fellow of the Entomological and Zoological Societies; and, in addition to much active philanthropic work, in spite of constant ill-health, she has, since the publication of her first volume, carried out and recorded a long series of observations on animals and plants of all kinds, which have formed the subjects of a series of delightful books. "Inmates of my House and Garden" appeared in 1895, "Glimpses of Plant Life" in 1897, "Rambles with Nature Students" in 1899, and "Quiet Hours with Nature" in 1904. A skilful draughtswoman, she frequently exhibited her own studies of feathers, plants, &c., together with the many natural curiosities she had collected, at our Conversazione, and, when her health permitted, was herself a regular attendant. As a writer she has done much—very much—to inculcate the principles upon which our Society is based, principles which may be, in the main, summarised as the loving study of Nature. Mrs. Brightwen died at The Grove on May 5, and was buried at Stanmore on the 9th.

A Correction.—In Canon Rawnsley's sonnet, on p. 61, the first word of line 6 should be "Thy," not "My"; and in line 9 the full stop should be after "follow," and not at the end of the line.

Botany and the London County Council.—We are glad to see that our comments on a paragraph from the *Daily Express* in our March issue have attracted the attention of the Editor of the *Journal of Botany*, and have led to his making some enquiries. It seems that the paragraph we quoted from the *Express* is inaccurate, in so far that the Council will not provide its staff with cycles, though it will pay them a penny a mile when using their own machines. To us this is immaterial. What is vastly more important is the following assurance officially supplied to the *Journal of Botany*:—

"As to the collection of botanical specimens, the greater part of the specimens are gathered from the Council's parks, privately owned gardens and lands, and until quite recently from the Royal Parks, consisting largely of the waste produce, prunings, &c. The extent to which specimens are gathered at or near roadsides is very small, and is limited almost solely to buttercups, chickweed and shepherd's purse, which are numerous, and of which only a few are taken. Rare plants are never taken. An undertaking not to uproot or in any way damage the character of the flora, &c., is always given whenever the permission of owners for facilities to gather specimens is sought or obtained. This rule is also rigidly observed whenever any material is taken at or near roadsides."

This seems to us, as to the *Journal of Botany*, satisfactory; but at the same time we hope that, after the proposed expenditure of £2,405 at Avery Hill and Golder's Hill, the Council may be able to grow its own buttercups, chickweed and shepherd's purse. In his article on this subject in the May number of the *Journal of Botany* Mr. Britten expresses once more his view that our Society has neglected "a great opportunity for making its influence felt, and for establishing its claims to the support of all Nature-lovers," by not protesting more actively and energetically against the wanton destruction by local councils of roadside beauty by the "disfigurement of trees and hedges," and "the continual paring of roadsides and scraping of hedge-bottoms." We have protested in this matter repeatedly, both in print and verbally, and we fully agree with Mr. Britten in his regret for this widespread policy of uglification; but we cannot confine our efforts to one department of our work.

The South Eastern Union of Scientific Societies.—A most attractive programme has been issued for the Congress of this Union (with which our Society is affiliated). It is to be held at Eastbourne Town Hall, from June 6 to 9, under the presidency of Dr. Francis Darwin, F.R.S. After an excursion to Beachy Head on the Wednesday afternoon, the President will deliver his Address, and on the succeeding days there will be papers on the Flora and Birds of the district, on coast-erosion, by Mr. E. A. Martin, on the Geology of the Ravensbourne, by Mr. W. H. Griffin, and on Nature-study by our Honorary Secretary. There will be excursions to Michelham Priory, Pevensey and Alfriston, and the Mayor will give a reception at which Mr. E. J. Bedford will lecture on "Bird Architecture."

ORIGINAL RESEARCH.—Any Members who have, during the past year, been engaged upon any original research, or who have published the results of their past work, are requested to forward particulars of the same as soon as possible to the Honorary Secretary that he may draw up the return desired by the South-Eastern Union.

NATURAL HISTORY NOTES.

350. Stoats Carrying Eggs.—The following account has just been given to me by one of our village lads. "On the borders of a wood near here I saw two stoats. One was lying on its back with an egg between its four paws, and the other stoat was dragging it along by its tail." Rats have been seen to convey eggs in a similar manner.

Ropley, Hants, May, 1906. M. S. HAGEN.

351. Moorhens Perching.—I sometimes see moorhens in the trees 25 feet from the ground, and they so frequently resort to trees covered with ivy, that it has occurred to me they may do so for the purpose of eating the berries ; but of this I am by no means sure.

May, 1906. EDMUND THOS. DAUBENY.

352 Dying Bird's Devotion.—A Danzig correspondent writes: "While swimming on a lake with her brood of five a diver-bird was shot, and although mortally wounded collected her young ones and dived for their safety. When her dead body floated to the surface the five little birds were still clinging with their beaks to her wings, but all had been suffocated by remaining too long under the water."—*Daily Mail*, May 11, 1906.

353. Owl as Foster-parent.—In the woods near Belford, Northumberland, there has just been found a nest of twelve pheasants' eggs being hatched by an owl. Although the owl has been occasionally scared from her unusual nest, she has always returned to her occupation.

May 17, 1906.

354. Fertilisation of the Primrose.—The following observations were in all cases made on sunny days, when insects were flying about.

April 5.—Primroses not visited by any insect. No insect inside tubes.

April 7.—Three small bumble-bees, one being black, the others brown, busy among primroses.

April 9.—Primroses in pots in a window visited by small bumble-bee.

April 11.—Primroses visited by three or four small bumble-bees ; no beetles inside. These bees divided their attention between violets and primroses.

April 13.—Several hive-bees flying among primroses, but going to other flowers only. *Euphalerum primulæ* in one out of ten primroses picked.

April 15.—*Euphalerum primulæ* well out, monopolising the tubes of the primroses, nine out of ten being tenanted by this little beetle. Several hive-bees, and one large bumble-bee on the bed, going to other flowers, and taking no notice of the primroses.

April 16.—One small bumble-bee on primroses. A small miner-bee was struggling to enter a primrose. This bee keeps to the flower for some time, and does not move rapidly from one to another.

April 17.—*Euphalerum primulæ* in almost every tube.

April 21.—One small black bumble-bee probing the flowers. *Euphalerum primulæ* very common.

April 23.—Saw no bees visit primroses in a hedgerow half a mile long that abounded with this flower.

April 30.—No insect in or on primroses.

May 1.—One small black bumble-bee and one large bumble-bee visiting primroses. No beetles in tubes.

May 2.—Several kinds of bees on bed; primroses not visited by any insect. Curiously enough, both small and large bumble-bees refused to look at any primrose at all, but were busy enough on the flowers amongst them.

May 3.—Two small bumble-bees on blooms; these visited other flowers as well.

Four kinds of bees have visited primroses occasionally. The hive-bee has not been seen to do so. *Euphalerum primulæ* has been almost absent from a large bed of primroses where last year it was common. On another, 300 yards off, it was abundant. Its reign is short, three weeks at most, and bees do not visit the flower tenanted by it. Violets, dead-nettles, and many other flowers growing among primroses, are more attractive to bees than the primrose itself. At the end of April, and the beginning of May, when in greatest perfection and abundance, it is more neglected by insects than at an earlier period. The agency of bees as fertilisers is insufficient; that of *Euphalerum primulæ* ample in most instances, where it occurs, and during the short time it is out. How the vast majority of blooms are fertilised when primroses are in the greatest profusion is still a puzzle.

Southacre, Swaffham,
May, 1906. EDMUND THOS. DAUBENY.

NATURAL HISTORY QUERIES.

75. Eggs in Mole-hills.—Can you or any of your readers account for the fact that when my men were levelling mole-heaps they discovered a hen's egg concealed in two of the heaps in an upright position, with the narrow end in the hole leading into the moles' run? In outward appearance the heaps were precisely similar to other mole-heaps, and had evidently not been disturbed by any human being. The same phenomenon was discovered last year in another field. Some hens were kept about 300 yards away.

ALFRED NEILD.

76. Woodpecker's Love-call.—We often hear Woodpeckers calling to their mates in springtime. When so doing, some kinds tap so rapidly with their bills upon the trunk of a tree as almost to produce a musical note, which may be heard a long distance. The Greater Spotted, and the Lesser Spotted Woodpeckers employ this tapping as a love-call; but is it a universal habit in the tribe? Do Green Woodpeckers tap in this way? Our woods resound with their loud voices, which they are so fond of using that one would imagine there was no necessity for their tapping when the important business of love-making is going on. Last spring I watched two Green Woodpeckers mating. One on a tree near me called out and was answered by another half a mile off. This went on for some time, and at last they got together; but there was no tapping. Respecting the Great Black Woodpecker, which has been turned down in England in the last few years, and has occurred round Euston, Riddlesworth, and Brandon, I can find out nothing as to whether it taps or not when love-making. Perhaps some one who has had opportunities of watching this species in the pine forests on the Continent may be able to tell us what its love-call is.

May, 1906. EDMUND THOS. DAUBENY.

77. Cuckoos and their Young. Do Cuckoos remember where they have placed their eggs? It is, I believe, generally considered that when a Cuckoo has finished laying she leaves all future care of her offspring to the unsuspecting foster-parents. Professor A. Newton remarks in the *Encyclopædia Britannica* (Ninth Edition, vol. vi., p. 686): "Of the assertion that the Cuckoo herself takes any interest in the future welfare of the egg she has foisted on her victim, or of its product, there is no evidence worth a moment's attention." A little experience of mine in Sussex leads me to think that Cuckoos are not quite such unnatural parents as is popularly supposed, but have some parental feeling, notwithstanding the fact that they inveigle other birds into hatching their eggs for them, allowing them also to bring up their progeny. Four or five years ago I came across a young Cuckoo crouching at the bottom of a

ditch, which had evidently only just left its nest. Seeing it lie so still I thought it must have received some injury, so proceeded to pick it up that I might examine it. It allowed me to do this without any attempt to get away; but as soon as I had done so began to struggle and set up loud cries of alarm. Immediately a pair of adult Cuckoos appeared on the scene, and for a moment or two there was a tremendous hullabaloo as they circled around me, threatening me in violent cuckoo language. Finding the young bird unhurt, I allowed it to escape, and it hastily fluttered into some neighbouring bushes. The old birds promptly disappeared through the trees overhead, and I saw them no more. I have since wondered if the birds that came to the rescue were the parents, or whether a young Cuckoo screaming for help will bring any adult Cuckoo which may be within hearing to its aid. I feel that I must really apologise for this note on such a much written-about subject as the Cuckoo, but not having heard of a like occurrence, thought it would be interesting to hear if any other reader of NATURE NOTES has met with a similar experience.

J. T. BIRD.

78. Bees and Blue Flowers.—You will remember Lord Avebury's paper, published in the *London Magazine* in 1903, entitled "Can Insects Reason?" in which he describes his exhaustive and carefully conducted observations, and experiments proving that Bees in their honey-gathering operations show a decided preference for *blue* flowers. A member of the Natural History Society here, who is an observer, states "it is a natural inference from Lord Avebury's experiments that Bees ought to select *blue flowers* for their visits. But when we go out into the garden or fields and watch them at work, we find that they *do not*," and quotes numerous observations he has made on different coloured flowers to prove his assertion. May I ask if you have a member or members who have studied this subject who can corroborate Lord Avebury's experiments? It is by interchange of opinion that we can arrive at definite conclusions, and I shall always be pleased to reciprocate when called on, if in my power to do so.

Eastbourne. J. T. RODDA.

79. Half-frozen Worm.—In the early morning on March 5, before the sun had had time to soften the frozen mould on the flower-beds, one of the members of the Clapham High School Field Club, while breaking up the frozen surface of the mould in a garden, noticed what looked like a small stick or twig, standing *straight out of the ground*. On inspection this twig was found to be half a frozen worm. By working with her fingers round the worm she was able to release the prisoner. The portion of the worm in the ground was quite soft, and by warming in her hands and breathing on it the frozen part of the worm was at last restored to life, and a few minutes after our member had the satisfaction of seeing the worm wriggle away quite happily. (1) Is it not remarkable that the worm should so soon recover, the half of it being quite frozen? (2) Can you account for the position of the worm, in a vertical position, half out of and half in the ground? (3) Is this one of the many instances which show how difficult it is to kill a worm? GWENDOLEN E. HINE.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

New Members.—*Central Society.*—The following stand for election: E. J. Bedford, Esq.; F. A. Canton, Esq.; Carmarthenshire Antiquarian Society; Miss Angela C. Esch; Percy E. Frost, Esq.; D. M. Richards, Esq.; Miss L. Russell; Miss Florence Saunders; O. C. Silverlock, Esq.; Arthur B. Wallis, Esq.

Blackburn Branch.—W. C. Hawthorn, Esq.; W. Gedney, Esq.; B. W. Marsden, Esq.; C. W. Marsden, Esq.; J. W. Marsden, Esq.; W. A. McLean, Esq.; A. Stratford, Esq.; W. H. Western, Esq.

Ealing Branch.—John Lee, Esq.; W. Wray Skilbeck, Esq.; Mrs. Wray Skilbeck.

Hampstead Branch.—Samuel Lithgow, Esq. ; C. T. Owen, Esq. ; Mrs. M. L. Prochondrick.

Subscriptions.—The Council has pleasure in acknowledging subscriptions of greater value than 5s. from the following members: C. A. Canton, Esq., 10s. 6d. : Mrs. Broomhead-Colton-Fox, 10s. 6d. ; Miss Broomhead-Colton-Fox, 10s. 6d. ; A. L. H. Townsend, Esq., 10s. 6d. ; Dr. Treutler, 10s. ; Mrs. Treutler, 10s.

The Committee of the Ealing Branch has pleasure in acknowledging subscriptions of greater value than 5s. from the following members : W. Wray Skilbeck, Esq., 10s. 6d. ; Mrs. Wray Skilbeck, 10s. 6d.

The Committee of the Hampstead Branch has pleasure in acknowledging a subscription of greater value than 5s. from Mrs. M. L. Prochondrick, £1 1s.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings of June 18th and July 16th, for the purpose of issuing books to members.

The Honorary Librarian has pleasure in announcing the following additions to the Library, all kindly presented by the Editor: "Bulletin of the British Ornithologist's Club on Migration in 1905"; "Homeland Handbook, Dorchester" (Dorset); "Gilbert White's "Natural History of Selborne," rearranged by Chas. Mosley; "Nature Knowledge in Modern Poetry," by Alexander Mackie ; "Notes from Nature's Garden," by Frances A. Bardswell.

NEWS FROM THE BRANCHES AND AFFILIATED SOCIETIES.

Wales and Monmouthshire.—In 1905, at a meeting held in the Guild Hall of Carmarthen, a Society known as the Carmarthenshire Antiquarian Society and Field Club was founded. As stated in the Prospectus: "The object of the Society shall be the practical study of Natural History, Archæology, Art, Literature, and other kindred subjects, as far as they pertain to Carmarthenshire, and the encouragement of such studies by any means that may seem desirable." The methodical manner in which this work is carried out is shown by the fact that a weekly column of Notes, contributed by members and edited by the Honorary Secretary, appears in the *Welshman;* rambles and excursions are organised ; and, during the winter, lectures are arranged. As will be seen, these objects and methods are very similar to those of the Selborne Society, and the Carmarthenshire Society has now become affiliated to the Selborne Society. This result has been brought about mainly through the good offices of the Honorary Secretary of the Carmarthenshire Society, the Rev. M. H. Jones, B.A., who has been untiring in urging his Society to affiliate with ours.

Excursions.

Saturday, April 21.—Fourteen members assembled at Coulsdon for the first ramble of the season in spite of somewhat unpromising weather, and were rewarded for their courage by a delightful walk and nearly perfect weather. Proceeding over Farthing Downs but few flowers were seen, but the delicate greens of the budding foliage and the extensive views of the hill scenery were charming. On entering Devilsden Woods, however, great quantities of spring flowers were found. Under the hedges the sweet Moschatel was in full bloom. After tea at the "Old Fox" Inn on Coulsdon Common, the leisurely return to the station was graced by the full chorus of birds, including the strain of that sweetest of songsters, the Nightingale, several of which species were singing in the gathering dusk, though they had not yet attained to their full song.

Saturday, April 28.—Under the leadership of Mr. Douglas Wilson, seventeen members and friends visited Chipperfield Common, going by fieldpath from King's Langley. Wild flowers were not evident in great profusion, but the blackthorn was still snowed over with blossom, and the banks beneath were starred with pale Primroses and scentless Violets. Under the hedge coverts shoots of the Lesser Periwinkle bravely pierced the thick carpet of dead leaves, and strewed the ground with trails of vivid green flecked with purple flowers. Chipperfield Common, with its huge bushes of Furze covered with Nature's gold, its Junipers bearing both flowers and fruit, and its fine Scotch firs, need fear no comparison. Owing to its guarded recesses formed by dense prickly masses of

gorse, it makes a perfect bird sanctuary, where nests are almost impregnable. The rich chorus of a thousand blended notes told that the birds were alive to this. Blackbirds and Thrushes led the music, but amid the tangle of song could be distinguished the note of the Robin and Wren, the Chiffchaff, Lesser Whitethroat, Blackcap, Chaffinch and Garden Warbler. During a wait caused by a shower just as tea was over, Mr. Avenell very kindly read a short paper on the history of King's Langley and the neighbourhood. Afterwards, the sky having resumed its pleasant aspect, the ramblers started homewards. Later, the voices of the Nightingale, the Cuckoo, and the Green Woodpecker were also heard. A grass field we passed was noticeably traced all over with sinuous lines of brown herbage. The mystery was explained when some frightened Field Voles darted into their holes. The ground was quite spongy and perfectly riddled with their burrows, and the grass in consequence almost entirely ruined. A marvellous sunset crowned the day. Facing us, the sky in the east was grey and sombre, and the contrast on looking backwards was very striking. Above the western earth-line, and barring the horizon, rose deep purple clouds edged with brilliant crimson. Above these, far up to the zenith towered cloud mountains flanked with pavilions and battlements and towers of gold, amethyst and amber, shading off into pale sea green and delicate rose-pink.

Saturday, *May* 5.—A party of forty-six members and friends met at Chingford to walk to High Beach, under the guidance of Mr. C. H. Cox, B.Sc., of Tottenham Junior Branch. Before starting on the walk proper a visit was paid to the Museum of the Essex Field Club, which is close to the station and is free to the public. Here, although only a very short time was available, it was quite clear that the Club is doing excellent work, the exhibits being of such a character as greatly to enhance the interest of a tramp through the Forest. On leaving the Museum the route taken lay past the Connaught Water and thence by a circuitous walk to the "Robin Hood," where tea was provided. After tea a move was made towards the King's Oak, where the party split into two divisions, one led by Mr. Cox along the west side of the Forest to catch an early train from Chingford, the other guided by Mr. Hornblower, following the same route at a more leisurely pace. This latter party was rewarded by seeing a Cuckoo at very close quarters.

Saturday, *May* 12.—A party of twenty-five assembled at Edgeware Station for a ramble—for the greater part of the way by footpaths and green lanes—through Edgeware, Elstree and Mill Hill. The first halt was made at the parish church of Little Stanmore (*alias* Whitchurch), noted for the organ on which Handel played, and for its fine frescoes, the work of the French artists, Verrio and Laguerre, which entirely cover the ceiling and walls. The organ case is the work of Grinling Gibbons. The tower is Gothic in style, and dates from the time of Henry VIII., but the body of the church was rebuilt in 1715. In the churchyard lies buried William Powell, the "Harmonious Blacksmith," his tombstone being ornamented by an anvil, a hammer, and some musical notes. As the ramble continued, glimpses were obtained through the trees of Canon's House, formerly the residence of Handel's friend and patron, the Duke of Chandos. After tea at Elstree the party wended its way *via* Edgewarebury to Mill Hill, which was not, however, reached until well after darkness had set in, owing to the irresistible attraction afforded by several Nightingales in full song.

FORTHCOMING EVENTS.

Council and Committee Meetings.

Tuesday, *June* 12.—Council Meeting at 5.30 p.m.
Monday, *June* 18.—Publications Committee at 5.30 p.m.

Excursions.

Central Body.

Saturday, *June* 2.—No ramble, on account of the Whitsuntide holiday.

Saturday, *June* 9.—Roundabout and Petts Wood. Trains leave Victoria (S.E. Ry.) at 2.20, Holborn Viaduct at 2.25, and St. Paul's at 2.27 p.m. Take return tickets to Bickley, 2s. from Victoria, 1s. 8d. from Holborn. Meet *outside* Bickley Station at 3.5 p.m. Tea at Dabner's, Foots Cray Common. After tea a visit will be paid to Chislehurst Caves. Return from either Bickley or

Chiselhurst. Frequent trains. Tickets are available for return by either route. Guide, Mr. C. M. Mühlberg.

Saturday, June 16.—Stoke d'Abernon. Train leaves Waterloo 2.15, Clapham Junction 2.27, Surbiton 2.49 p.m. Meet at Cobham Station at 3.6 p.m. Take cheap return tickets to Cobham, 1s. 9d. Mr. Philip M. Johnston will read a paper on Stoke d'Abernon Church.

Saturday, June 23.—Wimbledon. *Members only.* Meet in Station Yard (L. & S.W. Ry.), near Booking Office, at 3.15 to 3.30 p.m. Trains leave Waterloo at 2.57 and Clapham Junction at 3.6 p.m., Ludgate Hill at 2.54, Victoria (L.B. & S.C. Ry.) at 2.53 p.m. Ramble on Common, visiting "Cæsar's Camp and Well," Queensmere and Windmill; 6.40 to 7.45 the Old Rectory Grounds. A paper will be read by Mr. Willson descriptive of the ancient residence. Guide, Mr. S. Willson.

Saturday, June 30.—Havering-atte-Bower. Train leaves Liverpool Street at 2.30 p.m. Take return tickets to Romford, 1s. 6d. Guide, Mr. A. B. Hornblower.

N.B.—The Vicar has kindly consented to have the old parish registers open for inspection. In the village are stocks and a whipping-post. The whole district abounds in places of historic interest, ranging from the time of Edward the Confessor to that of Charles the First.

Saturday, July 7.—Weybridge and St. George's Hills. Meet at Weybridge Station at 3.10. Trains leave Waterloo (Main line) at 2.28, and Clapham Junction at 2.27 p.m. *Passengers from Clapham Junction change at Surbiton.* Return tickets 2s. 10d. Tea at Swiss Cottage at 5 p.m. Further ramble to Fox Warren optional. Frequent return trains. Guide, Dr. Henry Willson.

Projected arrangements:—

July 21.—St. Albans district. Guide, Mr. W. Percival Westell.

July 28.—Iver Water Splash. Guide, Mr. Wilfred Mark Webb.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Hon. Secretary of the Excursions Committee*, at 16, Heathcote Street W.C.

ANSWERS TO CORRESPONDENTS.

H. Goode.—The function of the "idioblasts" or "internal hairs" in the petioles of water-lilies is not clear. As they contain much calcium-oxalate they may be mainly excretory; but it has been suggested that they are concerned in the absorption of gases.

The "rust" on the fern from Matlock is certainly uncommon. It is *Uredo polypodii*, Pers., and seems mostly, as in this case, to occur on *Cystopteris fragilis*, though it is also recorded on *Polypodium Dryopteris* and on *Adiantum Capillus-Veneris*. Your observation that it does not prove fatal is interesting.

L. Copland.—You are quite right, your plant is the portulacaceous, (*Claytonia perfoliata*), which has appeared as a stray in many parts of England since 1858.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
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THE CULT OF THE SELBORNIAN.

By Dudley Wilmot Buxton.

I WAS asked to commit to paper the gist of what I said at the Annual General Meeting of the Selborne Society, and I do so with the hope that some members may be in sympathy with my mood. As I write I am in "the garden that I love," and the drone of bees, the song of birds, with now and again the warning cry of the robin, form a not inappropriate orchestra to my theme. In days like these in which we live, the stress and strain of life become almost overwhelming; we grow strenuous, not only in amassing money, in the prosecution of research, in following the elusive chimera called "social success," but even in moments which should be devoted to self-culture, Nature study, thought. Indeed, too many find their life so engrossed by their routine pursuits that they wilfully forego all change of occupation, and voluntarily divorce themselves from those placid joys afforded by a retreat from the outer world into the realm of Nature which Selbornians hold so dear. It may be worth while to elaborate in what our cult consists. Truly Gilbert White of Selborne was our patron saint, but few of us can lead the contemplative life he led, or pass restful days in a fair country side, noting day by day in his diary the items which make up the Naturalist's Calendar, the flight and incoming of birds, the growth and variations of plants. These things are for the few, but given the spirit which actuated White, the environment can always be found. In most cases it is the spirit which is lacking. Even in the heart of the country, when the voices of Nature call aloud and the sweet breath of new mown hay, the indescribable beauty of lush meadows at the hour of sunset, seem to compel to Nature-love and contemplation of the beautiful, men yet stand aloof discussing turnips, or point-to-point races. In cities, amid the squalor of alleys and wynds, Selbornians dwell, and

in gentle love tend a solitary plant or a poor cageling and dream of fields and hedgerows. Richard Jefferies was no ruler of many acres, and yet his love for Nature has rarely been surpassed. It is the Nature-hunger of the man, not his environment, which induces him to detach himself from the treadmill of life and pass into that "better" land of thought and contemplation. He has no part in what Dickens called the "Gradgrind School"; in his realm each one seeks peace and ensues it. The millionaire can no more, and usually can far less. The sky, the air, the parks, if he be a town dweller, the hill-side and hedgerows, if his lot has fallen in the pleasant lines of suburban or country places, are his, and it depends upon himself whether they inspire him with greater thoughts or are merely commonplace. I take it that we, as Selbornians, aim at finding this inspiration. It is true our opportunities are different, still our goal should be the same; we should have much, if not all things, in common. The laws of Nature are cruel, no doubt, from the standpoint of our philosophy; although this observation is probably not accurate, laws of Nature are immutable, never capriciously cruel. Man may invoke man's law to injure or annoy his neighbour; Nature never does so. We find in Nature no place for petty squabbles, the fights of missel thrushes are Homeric, and generally two slain heroes are left to witness of the prowess of the combatants. The Selbornian notes these things and tries to introduce into his life not only the poetry and calm of Nature, but see in its due proportion the ego, the poor weedling, which is simply self and self-seeking, even though we give it grandiose names, and deck it out as *amour propre*, or respect due to "social position." The potato, bereft of light and without conditions favourable to growth, makes a much better struggle for life in a dark cellar than many a man attempts in his struggle for existence in adverse circumstances.

Then, again, it has always appeared to me that the true Selbornian should and must be influenced by his simple joys and peaceful communings with Nature, he must show a less angular side to his neighbours. It is a misnomer for one to be called a Selbornian and yet be ready to violate the harmony of the lives of others by thoughtless or ill-judged action. The Selborne Society is not merely a Natural History Society, nor is it merely a Field Club; it is, as I understand it, an association of men and women who have learned that life has a lovelier side than mere office or professional routine. This lovelier side may be seen and studied in leisure moments, and these men and women learn the power of Nature worship, which enables them to profit by their field rambles, and become broader, gentler, more harmonious members in the scheme of life.

Unless my belief is right I cannot think the Selborne Society will ever be the power it ought to be. It must work as a whole, not have divided counsels or be given to schisms. As I finish these lines I look about me and see an azure sky flecked with

fleecy clouds, a long line of flanking woods, my well-beloved garden with its flowers and promise of fruit, and I say this all makes for beauty. So is it, I think, for the Selborne Society; each member takes his part, it may be small or great, but take them altogether their efforts should make for beauty, and make for a Selborne Society worthy of the man who taught us to love Selborne and hear the voices of the country.

THE CALDIERA OF FAYAL.

OF the many sights well worth visiting in the Azores, not the least interesting is that of the Caldiera, or great extinct crater, of Fayal. Having been assured that the ascent, 3,000 feet, presented no difficulties, we left our steamer one fine morning in May, were rowed across the blue waters of the harbour, made our way along the pier of the town of Horta, crowded with the primitive ox-carts of the country, and passing along the main street of pink, buff and white washed houses, with their tiled roofs and quaintly-varied green woodwork, finally reached the inn, obtained our carriage, and set out on the expedition. Before beginning the ascent of the steep hill behind the town, a little shrine marks the limit of the lava flow two centuries ago. The road then leads upwards between walls sheltering gardens from the high winds, where here and there a spray of tiny pink roses, a tangle of honeysuckle or Bignonia, a tall palm or broad banana leaf peeps over, and suggests in a tantalising way the wealth of flowers and greenery concealed. The wonderful and extensive private gardens of the Azores contain treasures from all parts of the world: to see these only were well worth the journey from England. Here are avenues of palms and bananas, damp glades where New Zealand tree-ferns arch overhead, open sun-lit spaces of turf starred with the rainbow-coloured ixias and Sparaxis of the veldt. There the Datura hangs out its "silver trumpets," contrasting it may be with the lighter growth and feathery crimsons of the Australian bottle-brush, or where they bask on that rocky slope, you are fascinated by the strange growth of the dragon-trees, yuccas and cactuses. Among the orange groves rises the loquat with its broad, handsome leaves, almond-scented flowers and tiny golden medlars: farther on a strawberry-like fragrance may guide you to a great Magnolia covered with small pinkish tulips; or wandering up some woodland glade you find your path carpeted with scarlet flowers, and looking up you see, high in sunshine, the blossoming branches of some tall forest tree from Brazil, a marvellous glow of colour. In short, Ponte Delgada, in St. Michael's, is the gardener's paradise. That of magnolias alone, 250 species are *said* to have been introduced, gives some idea of the wealth of these gardens.[1]

To return to our route. . . . As the carriage climbs the

[1] There are not a quarter of that number of species known to science.—Ed. *N.N.*

steep ascent we have ere long a wide view over the interior of the island. The country is highly cultivated, chiefly in small and (at this season) bare ploughed fields, divided by low walls of lava fragments, or lines of the tall reed (*Arundo Donax*). Nestling in the broad valley below lie the tiny farm-houses of the rambling village of Los Flamingos, and beyond it are seen three of the grassy volcanic peaks, abruptly truncated by extinct craters, which are so peculiar a feature of the scenery of the Azores, while away to the north rise the great slopes of the central mountain group. But where is the luxuriance of vegetation the tourist vaguely expects? The fact is, to the ignorant lover of plants, the flora of the Azores is a disappointment. Even when previously instructed that it is poor in species (Watson gives 478), and that the great majority of these are European, or belonging to European genera, something more un-English in aspect is looked for, a hope only partially fulfilled in the sheltered valleys formed by the great extinct craters, *e.g.* As Furnas, where the few Madeira and Canary Island types are more prominent. On this road-side we may in the meantime console ourselves with the fact that the bramble, so very like an English one, is a species (or variety) peculiar to the islands, and that among the chinks of the lava dykes the ferns are unfamiliar. After an hour's ascent the carriage stops, and leaving it, we mount the donkeys previously sent on to await us. A rough, steep, stony path now leads past a little pine-wood into a deeply-cut lane, which *is* of an almost tropical aspect. From the banks hang the long shoots and great shining leaves of the Canna mixed with Hydrangea bushes, while above tower, and sometimes overarch, various foreign-looking evergreens, a species of Portugal laurel (*Laurus canariensis*) and the Faya (*Myrica Faya*), from which the island is named, being the most frequent. A little further on, emerging into open ground, there is a fine view over a wilder country, the great folds of the hills falling away in woods and moorland to the cultivated ground by the sea. Across the blue waters of the strait lies the island of Pico, so named from the mountain (7,600 feet), which, in ever changing beauty of light, shade and colouring, soars upwards, gleaming, vanishing, and re-appearing among the clouds around its summit.

The path now winds along edged with heath, juniper (*Juniperus Oxycedrus*), and the ubiquitous Hydrangea. Many plants introduced into the Azores have become wholly naturalised, and mix with the indigenous vegetation to an extent puzzling to the newly-arrived botanist. Such are the Hydrangea, Nile lily (*Calla*), the *Pittosporum* with its heavily-scented white blossoms; and in the woods, pines, Eucalyptus, cryptomerias, poplars, &c. The heaths here are the *Erica azorica* and the ling (*Calluna Erica*), neither in flower, and through them peep the crimson bells of the menziesia (*Boretta cantabrica*) and a stray butterfly orchis (*Habenaria micrantha*). Again we plunge into a lane, but this time might think ourselves in Devonshire, with its luxuriant ferns (*Aspidium aculeatum* and *Athyrium Filix-fœmina*). But they spring from a carpet of selaginella (*S. Kraussiana*), and an occasional tuft

of the Azorean whortleberry (*Vaccinium cylindraceum*) gives a touch of colour with its brightly-tinted young leaves. Soon after we enter on a rough track enclosed by Hydrangea hedges, finally emerging on what might be a Scotch hill-side with its mountain-grass, ling and tufts of rushes. After many a climb, that last shoulder of the hill, which has so long been eluding us, is finally reached, and we suddenly stand on the edge of the Caldiera. There it lies, a vast circular "cauldron," a mile across and a thousand feet deep. Before us a path with scanty foothold descends into the abyss, elsewhere the great enclosing cliffs rise from the depths in black precipices, their vertical line only broken here and there by some drooping veil of greenery, or, lower down, by the flanking buttresses of lava that suggest the final upleap of the fiery torrent, unable then to break its bounds, and the slow solidifying of the recoiling mass. The level floor, far below, is partly occupied by a lake or pool, from the dull surface of which mossy islets emerge, and near it rises a small hollow cone. The mists drift along the heights, stray rays of sunshine strike out patches of tender green against the surrounding gloom. It is a striking contrast to the last great crater we have seen, that of the Sete Cidades in St. Michael's, a valley with shining lakes, a prosperous village, fields and woods. Here it seems as if out of the dark depths any destructive force might suddenly break forth: a more eerie and impressive place was surely never seen.

The return to Horta was made in time to rejoin our steamer at twilight, our only regret being that time did not allow of the descent into the crater. It is said to be carpetted with *Sphagnum* and patches of the ice-plant (*Mesembryanthemum crystallinum*). On a route trodden by tourists we knew we were not likely to find the one great botanical treasure of the Azores, a *Campanula* (*C. Vidalli*) "with the habit of a shrubby Sempervivum." The few plants here mentioned have been verified from Watson's account of the flora in Godman's "Natural History of the Azores;" but of the forty plants he gave as "peculiar to the islands," many have since been found elsewhere, and others are regarded as mere varieties. A more detailed account of his forty is given in "A Visit to the Azores," by Mrs. C. Roundell.

L. Copland.

NATURAL HISTORY NOTES.

355. Hippopotami.—It is reported from Rhodesia that two hippopotami, the "sea-cows" of Natal in former days, have taken up their abode in the Matopo Dam, a few miles from Bulawayo. How they got there is somewhat of a mystery, for the lower regions of the Umzingwani River, from which it appears they must come, are over 100 miles from the dam. This is the first year in which the dam has been quite full of water, and if, as is supposed, the animals began to move early in the season when the rains were backward and the river was in consequence low, the instinct displayed by them is perhaps worth investigating by those interested in such matters. The hippopotamus is seldom found in Rhodesia, except in the larger rivers, such as the Zambesi, where in the lagoons above the Victoria Falls one may often see several at a time.

356. Eggs in Mole-hills.—In reply to Mr. Alfred Nield's query in the June number of Nature Notes (p. 116), it is probable the egg had been secreted

in the mole-hill by that predaceous animal the stoat. In the *Country Side* for June 9, an instance is given of a pheasant's nest containing fourteen eggs having being robbed by an old male stoat, which had stowed away its booty in the run or hole of a mole.

Fyfield, near Abingdon. W. H. WARNER.

357. —The eggs found by Mr. Nield were placed in the mole-hills either by a stoat or a rat, more probably the former, as being more likely to enter a mole run than a rat. Both stoats and rats are much given to stealing eggs and carrying them to a distance. They hide them up in any place that comes handy to them.

June, 1906. EDMUND THOS. DAUBENY.

358. Stoats Carrying Eggs.—I hope Mr. Hagen will not look on me as unkind in throwing doubt on the method by which he thinks stoats and rats carry eggs, viz., by clasping the egg in their paws, lying on their backs and permitting a friend to drag them along by the tail. This matter, in the case of rats, I threshed out in NATURE NOTES six or seven years ago. It is an ancient fable that dies hard, like that of hedgehogs sucking cows and vipers swallowing their young to save them from danger. No animal would trust its tail in another animal's teeth for the purposes of a tow rope. The skin of the tail would not stand the strain, nor would the animal allow its hair to be rubbed the wrong way by being dragged along the ground when lying on its back with an egg on top. The hair would come off and the back become sore. Stoats and rats carry off eggs by rolling them along the ground, and also by holding them under their chins against the breast.

June, 1906. EDMUND THOS. DAUBENY.

359.—With reference to Natural History Note No. 350 in June issue, it is well known to gamekeepers that stoats will steal eggs from pheasants' nests, and that the means adopted for taking them to a hiding place are as follows: The egg is placed on the ground and is then rolled along by the crafty animal pushing its nose against it. I knew of an instance of over 100 pheasants' eggs conveyed to a hiding place in this way by a pair of stoats. Every egg was packed in a series of rows, and not a single egg was broken or even cracked.

W. PERCIVAL WESTELL, F.R.H.S., M.B.O.U.

St. Albans, Herts, June 13, 1906.

360.—An intelligent working man saw a stoat carry six young ones (as big as field mice) one after another to an old willow stump, close to where he was working last week, and a friend of mine also saw a weasel carrying a tiny young one in its mouth last year. W. A. SHAW.

Haselbeech, Northants.

361. Lamb and Lapwing.—On my way to Pocklington the other day I heard a lapwing making a most unusual fuss. On looking over the hedge I saw a sturdy lamb standing in a defiant attitude, and the lapwing striking at it with its wing and screaming in distress and anger: the lamb never flinched. Suspecting what was the matter, I drove the lamb away and found a baby plover crouching on the ground. W. D. WOOD-REES.

362. London Birds.—With reference to Mr. Walter Johnson's interesting article hereon in the June issue, I should like to state that I have seen a specimen of the Greater Whitethroat in the very heart of the City, namely, in Basinghall Street. If I remember rightly, it was during the springtime of 1900. Last year I was much interested in seeing a magpie flitting about in Regent's Park, and, of course, the well-known "Don't scold so, Sukey" notes of the ring-dove or wild wood-pigeon may be heard in the Park almost at any time. The last occasion when I went across the Broad Walk, I espied a female ring-dove sitting on her nest in an elm tree, and the male bird uttering his love song and cheering on the brooding dame.

W. PERCIVAL WESTELL, F.R.H.S., M.B.O.U.

St. Albans, Herts,
June 13, 1906.

363. Woodpecker's Love Call.—Respecting Natural History Query No. 76, I presume that Mr. Daubeny refers to the well-known "drumming" note made by the Woodpecker, and the Lesser Spotted species in particular, when tapping vigorously to waken the lurking insects. I have watched the Lesser Spotted engaged in these operations many times, but I cannot see any connection between this tapping for insects and a love call. The note of the Lesser Spotted seems to be "chee, chee, chee, chee." The well-known laughter-like notes of the Green Woodpecker only require mentioning, whilst the Great Spotted seems to be a particularly silent bird, if his "drumming" noise is excepted.

The noise drummed out by the Lesser Spotted Woodpecker is a delightful woodland sound, but it has never struck me that the noise was in any way connected with courtship, but rather entirely owing to the quest for food.

W. PERCIVAL WESTELL, F.R.H.S., M.B.O.U.,

St. Albans, Herts.

June 13, 1906.

364. Can Swifts take Wing from the Ground?—The following letter from Mr. John R. Carr-Ellison, of Hedgeley, Alnwick, has been sent to us for publication:—

"I read a discussion in the *Daily Journal* last week on the subject of whether or not a swift can take flight if laid on the level ground. I have to-day had proof that very often they cannot, and this is the third time in the last thirty years that the same thing has happened at the same spot. I was sitting in my study about 5 p.m., when my wife came and told me that two starlings were fighting on the walk in the garden outside my window. I found it was a cock starling pecking at a swift. The starling then flew onto an apple espalier close by, and watched the swift, which then made an attempt to fly along the walk, slightly down hill; but it never got its wings clear of the ground. I then ran out and caught the swift on the ground, and brought it to the window to show my children. I then threw it up into the air, and it flew away, but had evidently been hurt by the starling or was weak from the cold weather and want of food. The cause of this happening three times, to my knowledge, in the course of thirty years is this: Above an upstair window, not far from my study window, there is a hole made on purpose for birds to build in. Starlings always build in it, in April or early in May; and after they have left the hole the swifts come and build in the same hole. But sometimes they arrive before the starlings have left, and explore the hole, and get caught by a starling returning to feed its young. The swift is immediately pulled out onto the ground below, where he lies helpless, and is pecked by the starling whenever he attempts to move, and no doubt would soon be killed or die of starvation. On the two former occasions the swift had not suffered so much, and on being thrown into the air went away with his natural strong flight. I consider that a swift cannot rise from the level ground, and never alights on it willingly, but always builds its nest and roosts on ledges, or in holes of cliffs and towers and high buildings, from which it can throw itself into mid-air.

365. Rooks.—In answer to a query, No. 42, in NATURE NOTES of February, 1905, *re* rooks measuring their nests with potatoes. Last year I found three or four small potatoes under our rookery, but they had all been more or less pecked. This spring, so far, I have only found three. The first was half a medium-sized potato, which had been cut and healed again in the ground; the best part in the middle was pecked away. The second was a bit of well-pecked rind, roughly about an inch square; the third, also, has the inside all pecked away, and is too large to represent a rook's egg. I think the rooks must carry them to their nests to feed their young ones; I have only found the potatoes after some had hatched, and they probably drop the very small, round potatoes, as they would be so difficult to hold while pecking at them. Also in the rookery here I have never noticed the rooks on the ground under the trees, so think they would not pick them up again. I have not found any potatoes in the autumn.

B. G. STILWELL.

366. Hens.—A hen here contracted the habit of going to the top of a holly tree to lay her eggs. As the eggs fell to the ground, and, of course, were

smashed, this was thought an unprofitable proceeding, and her owner had her killed. EDMUND THOS. DAUBENY.

South-acre, Swaffham, June, 1906.

367. An East Anglian Ternery.—A little time ago a friend whose tastes agree with mine wrote to say I must pay him a visit when the Terns were nesting. This visit I have just paid. On a dangerous part of the Norfolk coast, near his residence, there is a wind-swept island, but a few feet above high water mark, given over to pebbles and banks of sand. It is the resort of a few fishermen and cockle hunters, and is dear to the ornithologist as a nesting place of the Common and the Lesser Tern. A weather-beaten mariner was waiting for us at the little quay, where were sundry boats, and three or four small fishing smacks lying on the mud, one at least being far too ancient ever to set sail again. Hardly had we begun our three-quarters of a mile's row against wind and tide, with mud banks on either side, when the cries of the Terns were heard, and their pretty evolutions in the air seen. The Common Tern hovers for a few moments above the water, and then drops straight down into it, somewhat after the fashion of a kingfisher, seeking for the small fry on which it feeds. The movements of the Lesser Tern are much the same; though it does not hover previous to dropping into the water. Both kinds go in over head and ears, reappearing again almost instantaneously, and frequently repeating the performance several times in a minute. The fishermen tell me they rarely see them settle on the water, or attempt to swim.

In walking close to the incoming tide we amused ourselves by digging up cockles in the sand, their tiny tell-tale breathing holes being here, there and everywhere at the water's edge. These appeared at breakfast next morning, and were voted very good. Among the pebbles above high water mark, we soon discovered numerous nests, if the slight depression made by the Terns to receive their eggs may be so-called. As is the case with many ground-nesting birds, Terns seem to be in the habit of making several hollows, before the site of the nest is finally adopted. We were, however, for a long time unsuccessful in finding any eggs, for our visit was a week too soon, and accordingly we sat down to leeward of a sand hill to enjoy a sun bath, and watch the different birds. Presently a pair of Shelduck passed leisurely overhead on their way from the sea to some rabbit hole on the mainland which they had adopted as a nursery. Then some Curlew flew close past without acknowledging our presence. Shortly after this a pair of Ringed Plover lighted on the pebbles, showing by their actions that their nest was near at hand. Encouraged by this we resumed our search, and were rewarded by finding one nest of the Ringed Plover, and two of the Lesser Tern, that contained eggs. I need hardly say that not an egg was handled or a nest touched. Our object was to observe and admire, not to rob.

I was sorry to see a company of common Gulls in immature plumage at the extreme point of the island, as they are incorrigible devourers of the eggs and young of small birds. The older Gulls were away at their breeding places. Besides these there was a flock of Sand-pipers, about a hundred. Why they were enjoying each other's society, and not employed in the important business of housekeeping, is a matter better known to themselves than to me.

This insignificant East Anglian Island is likely to be a Tern's breeding place for many years to come. It is a lonely spot that does not commend itself to trippers; the few fisherman who go there find there is nothing to be got out of Tern's eggs, and it is not overrun by that enemy to ground nesting-birds, the detestable brown rat.

South-acre, Swaffham, May, 1906. EDMUND THOS. DAUBENY.

368. Cuckoos and their Young.—I see that your correspondent, J. T. Bird, once more raises a question on this point, on which I ventured to write to you some years ago. I fear that now, as then, I must take the unsentimental view of the case; and in support of it I will quote from Lloyd's Natural History: "Dr. Rey, a well-known German oologist, has given his opinion that a female cuckoo will lay from seventeen to twenty-two eggs." How Dr. R. arrived at this conclusion I do not pretend to know; but unless my memory deceives me, I have seen the same statement in NATURE NOTES. If, then, the cuckoo really preserves a memory of so large and widely-scattered a family, she must either (as I before suggested) keep a note-book, or her memory must be phenomenal.

Professor Newton writes: "of the assertion that the cuckow (*sic*) herself takes any interest in the future welfare of the egg she has foisted on her victim, or of its product, there is no evidence worth a moment's attention." J. T. Bird writes of "a pair of cuckoos circling round, threatening in violent cuckoo language." May I point out that, unless our books are wrong, the notes of the male and female cuckoo are entirely different? If then, these two were using similar language they were not "a pair" in the usual sense of the phrase. All of us, I suppose, have occasionally heard two male cuckoos scolding at one another; I have fancied that at such times, like other angry people, they sometimes raise the pitch of their voices, but in this I speak under correction. I do not think any one claims to have seen an old cuckoo feeding a young one, which, I submit, is the crucial test of parental solicitude. Maternal love stopping short of this would not, it seems to me, benefit the young cuckoo much.

Otham Parsonage, Maidstone. F. M. MILLARD.

369. Red-backed Shrike.—On June 1 a pair were seen at Barmby Moor. Morris, in his "Book of Birds," says they are rarely seen in the East Riding. In 1857 he saw one at Kilnwick Percy, which is only 2½ miles from here.

W. D. WOOD-REES.

370. Sparrow and Cockchafer.—Near my house I saw a sparrow industriously picking at rather a large object, which he several times tried to carry out of my reach. I found it to be a cockchafer, still alive, but with all the legs eaten off. W. D. WOOD-REES.

NATURAL HISTORY QUERIES.

80. Dabchicks.—In a secluded park in Worcestershire this is the second summer a brood has been hatched in the same unaltered nest, but the hen now has three chicks of about three weeks' old, and two very tiny ones, probably only a few days' old. Is it a common occurrence for the birds to simultaneously rear two broods? A. C.

81. Caterpillars and Music.—I have in my bedroom a piano. The room is also used by me as a breeding establishment for lepidopterous insects. This year I have been rearing *Vanessa io* and *V. urticæ*, purely for scientific interest. They are enclosed in large hat boxes, the lids being replaced by green gauze. They had finished all their food plant (white nettle), and the majority climbed up to the gauze and there rested quietly. The piano struck up, and immediately they fastened their four latter pairs of feet to the gauze and the rest of each creature was raised downward, so to speak, as they were inverted. When a comparatively low note or chord was struck they swayed or rather jerked to and fro, and ultimately apparently lost self-balance and so fell. Can you account for this, or have any of your readers observed it? W. E. AVERY.

St. Catherine's School, Broxbourne, Herts,
June 7, 1906.

82. Geotropic Hyacinth.—Amongst a quantity of hyacinth bulbs I put in my garden this year, one was partly scratched up (probably by a cat) just as it was putting forth its shoot, and lay on the ground, "sideways." This shoot, then about two inches long, continued to grow, not upward, but into the earth. I dug it up and found that it had gone down quite eight inches and had blossomed, though not fully; the stem was short, as well as the flower being almost white, somewhat resembling bleached celery in colour. The bulb has been in water since I unearthed it, and the stem has now become the same colour throughout, whilst the blossom has turned pink, and is daily becoming darker. Is this unique? H. ALEX. DOWELL.

THE ANNUAL CONVERSAZIONE.

ONCE again, by kind permission of His Majesty's Office of Works and of the Civil Service Commissioners, the Annual Conversazione was held at the offices of the latter in Burlington Gardens. It took place on May 25, and is generally considered to have been the most successful meeting of the kind that the Society has ever held. There was, in any case, a record attendance, for the company numbered between 650 and 700. Among those present were Lord Avebury, the Hon. Mrs. Evelyn Cecil, The Hon. Sir John Cockburn, K.C.M.G., Lady Cockburn, Miss Akaster, Mr. and Mrs. Anstruther, the Misses Astbury, Mr. and Mrs. F. Watson Baker, Mr. E. J. Bedford (Honorary Secretary of the Eastbourne Natural History Society), Miss Bentley, Mr. E. Bidwell, Miss Bidwell, Mr. Cosmo Blore, Professor Boulger, F.L.S., F.G.S. (Editor of NATURE NOTES), Mr. R. H. Burne, B.A. (Honorary Secretary of the Malacological Society), Dr. Dudley Buxton (Chairman of Council), Mrs. Dudley Buxton, Mr. Miller Christy, F.L.S. (President of the Essex Field Club), Mrs. Climenson, Mr. Alfred Heneage Cocks, M.A., F.S.A., F.Z.S., Mr. G. H. Cottam, Mr. and Mrs. C. W. Cooke, Mr. Shaw Crompton, R.I., Mrs. Shaw Crompton, Miss Ethel Crompton, Mr. J. F. Davie, Mr. Walter Davies, Mr. Charles L. Druery, F.L.S., Mr. and Mrs. Wilfred Durrant, Mr. Fred Enock, F.L.S., F.E.S., Mr. F. G. Fenton, Mr. G. H. Goode, Mr. H. Norman Gray, Miss Grace M. Grint, Mr. Wintour F. Gwinnell, F.G.S., Mrs. W. Gwinnell, Mr. C. M. Hall, Mr. C. M. Hailes, Mr. John Hopkinson, F.L.S. (Honorary Secretary of the Ray Society), Mr. and Mrs. Gerald Horder, the Rev. Canon Horsley, M.A., the Rev. H. N. Hutchinson, B.A., F.G.S., Mrs. H. N. Hutchinson, Mrs. G. S. Jealous, Mr. and Mrs. A. S. Kennard, Mr. and Mrs. A. Kingsmill, Mrs. and Miss Van Langt, Miss Latham, Mrs. E. Comyns Lewer, Mr. W. J. Lucas, B.A., F.E.S., Mr. and Mrs. Budgett Meakin, Mrs. McKay, Mr., Mrs. aud the Misses Mühlberg, Mr. H. Munt, F.Z.S., Mrs. Percy Myles, Mr. E. A. Nash, Mr. Milton Offord, Mr. H. Plowman, F.S.A., Mrs. Plowman, Mr. Hubert H. Poole (Honorary Librarian), Mr. and Miss Van Praagh, Mr. W. P. Pycraft, A.L.S., F.Z.S., Miss Alice Ravenhill, Mr. and Mrs. H. W. Ravenshaw, Miss Rich, M.A., Mr. F. W. Rudler, I.S.O., F.G.S., Mr. F. McNeil Rushforth (Honorary Secretary of the Ealing Scientific Society), Mr. G. F. Saunders, F.L.S., Mr. Herbert Saunders, Dr. Dukinfield Scott, F.R.S. (Secretary of the Linnean Society), Mrs. Dukinfield Scott, F.L.S., Mr. J. J. Shakespeare, Mr. and Mrs. C. D. Soar, Mr. G. B. Sowerby, F.L.S., the Rev. T. R. R. Stebbing, M.A., F.R.S. (Secretary of the Linnean Society), Mrs. Stebbing, Miss Grace Stebbing, Miss A. Urlin, Mr. Harry J. Veitch, F.L.S., Mrs. Veitch, Mr. and Mrs. James Walker, Mr.

and Mrs. R. Marshman Wattson, Mr. Wilfred Mark Webb, F.L.S. (Honorary Secretary), Mrs. Wilfred Mark Webb, Mr. Percival Westell, M.B.O.U., Mr. and Mrs. Douglas Wilson, Dr. Henry Willson, Mr. Yeatman Woolf, F.Z.S., Mrs. Yeatman Woolf, Mr. MacLeod Yearsley, F.R.C.S., F.Z.S.

The proceedings were opened by a concert, kindly arranged by Mrs. Dudley Buxton, at which Dr. Dudley Buxton, Chairman of the Council, presided, and the Misses Izard and Messrs. Durand and Crauford Kent were good enough to give their services.

At 8 p.m. the President, Lord Avebury, delivered an address, which was printed in our June number.

A vote of thanks to the President was proposed by Sir John Cockburn, K.C.M.G., who tellingly reminded the company of what Lord Avebury had done for Natural History. The Rev. T. R. R. Stebbing, M.A., F.R.S., Secretary of the Linnean Society, seconded the motion, which he said was a necessary duty, but a difficult one, seeing how often Lord Avebury must have received votes of thanks.

The motion was carried with much applause, and afterwards Sir John Cockburn tendered the thanks of the meeting to Lord Avebury, who returned the compliment.

A vote of thanks to the Civil Service Commissioners and to His Majesty's Office of Works, proposed by Mr. Wilfred Mark Webb, the Honorary Secretary, who hoped that gratitude would also be expressed to all those who had helped in the arranging and carrying out of the soiree, and most particularly to Mr. Hubert H. Poole, the Honorary Librarian. Professor Boulger seconded the resolution, which was carried unanimously.

Lord Avebury then vacated the Chair, as he had to leave early to go to Court, and made a tour of the exhibits while the concert was resumed. At the close, a vote of thanks was passed to the musicians on the proposition of Mr. Mühlberg (Member of Council), seconded by Mr. W. Van Praagh, speaking on behalf of the visitors.

Later on in the evening the Rev. H. N. Hutchinson, B.A., F.G.S., gave an extremely interesting lecture on "Extinct Monsters."

Dealing first with the main principles of comparative anatomy by which Cuvier and Owen were enabled to build up the skeletons of extinct animals from small fragments, the lecturer followed the order of the progressive development of animal types from the huge Devonian "lobsters" to the Jurassic reptiles, and so onwards. Ichthyosaur, plesiosaur, *Brontosaurus*, *Megalosaurus*, *Iguanodon*, *Stegosaurus*, *Triceratops*, and the pterosaurs were each in turn graphically described and illustrated by a brilliant series of coloured lantern slides, mostly restorations by the skilful pencil of Mr. J. Smit, under the guidance of the lecturer. Coming to Tertiary times, Mr. Hutchinson then traced the evolution of the Mammalia, dealing especially with the

pedigree of the elephant. *Mæritherium*, *Palæomastodon*, *Tetrabelodon*, *Mastodon* and Mammoth were shown, as restored by Miss Alice Woodward. Many other slides were stated to be taken from Mr. H. R. Knipe's "From Nebula to Man." At the close of this story of absorbing interest, a vote of thanks was unanimously accorded to the lecturer on the proposition of Mr. Webb, seconded by Mr. Poole.

As on previous occasions, microscopes were exhibited in the South West Hall by Fellows of the Royal Microscopical Society, Members of the Quekett Club, North London Natural History Society, and others, as follows:—

Messrs. Henry Austin, R. and J. Beck, T. N. Cox, G. W. Coxhead, H. H. S. Fisk, H. E. Freeman, E. C. Goulton, A. E. Hilton, E. Hinton, the Rev. H. N. Hutchinson, B.A., F.G.S., Messrs. E. Leonard, R. Lewis, F.R.M.S., B. T. Lowne, M. Offord, F.R.M.S., H. W. Palmer, B.A., M. Poser, F.R.M.S., C. E. Rousselet, C. D. Soar, F.R.M.S., J. C. Soul, G. W. Simmons, A. W. Stokes, C. H. Stokes, H. Taverner, F.R.M.S., W. R. Traviss, C. Turner, J. Walker, M. W. Ward, W. Watson and Sons, W. Wesché, F.R.M.S., C. West, C. H. E. West, J. C. West, O. Whiting.

The Society showed the various editions of the "Natural History of Selborne" which it has in its library. The opportunity may be taken of saying that there are still many which are unrepresented in the collection. There was also on view an original letter and a sermon of Gilbert White, which are the property of the Society, and a selection of the leaflets and examples of the badges which it issues.

Among the specimens coming under the head of Natural History was a miniature bog, shown by Mr. B. T. Lowne, and a large aquarium arranged by Mr. Haig. Miss Hall, Curator of Stepney Borough Museum, showed most effectively, by means of a series of small aquaria, how these may be arranged so that their inhabitants can easily be seen. The various lizards and frogs—for the exhibition of which Mr. C. M. Hall was responsible—excited a great deal of interest and attention. Mrs. F. A. Currey sent some specially made models and photographs illustrating her methods of keeping caged birds. The feature of her system is to have large flight cages with sheltered corners on her lawn, and into these in the morning the small cages are put, and the doors opened, so that their inmates can have the benefit of a vastly enlarged space. In the evening the birds retire to their ordinary cages again, which are then taken into the house for the night.

Mr. H. Munt, F.Z.S., brought a large series of tortoise eggs with him. Mr. H. B. Sowerby, F.L.S., had (as on previous occasions), a handsome series of shells, while Mr. Peter Lawson, F.R.M.S., contributed a curious cameo. Other striking series of shells were shown by Mr. Winkworth, whose collection of colour variations of two hedgerow snails (*Helix nemoralis* and *Helix*

hortensis) was on view, and by the Rev. Canon Horsley, who contributed land shells, both British and foreign.

An interesting series of Japanese dwarf trees was sent by Messrs. Barr and Sons. Specimens illustrating life-histories of insects came from Messrs. Watkins and Doncaster, and some very handsome birds' skins from Messrs. Gerrard and Son, and from Mr. Rosenberg, while the ants' nests belonging to Messrs. Gamage were most attractive.

In the entrance hall was a long series of prints made direct from British ferns, exhibited by Mr. Charles L. Druery, F.L.S., which attracted considerable attention. Mr. E. J. Bedford showed stereoscopic views of Selborne ; and the coloured stereoscopic transparencies of flowers made by a mechanical process by Mr. T. Ernest Waltham, compared most advantageously with those made by the Sanger-Shepherd process with which naturalists are now familiar. We are glad to say that since the above was written, the Royal Horticultural Society has awarded to Mr. Waltham the silver Flora Medal.

Amongst other photographs were some of insects by Mr. W. J. Lucas, B.A., Mr. E. C. Goulton, and Mr. H. C. Main. Of plant sections taken under the microscope, there were prints by Mr. H. G. Goode; Mr. Kingston showed photographs of swans and cygnets, and Mr. Swain of lightning. In connection with his exhibits illustrating volcanic eruptions, Mr. F. W. Rudler, I.S.O., F.G.S., had some fine pictures of Etna and other volcanoes, while of a topical character were those lent by the Editor of *The Illustrated London News*, showing results of the earthquake at San Francisco.

Lantern slides were well represented, Miss Turner exhibiting some made from the photographs which won her the Royal Photographic Society's medal, and which included pictures of the Great Crested Grebe and other birds.

Professor Garwood, of University College, brought down photomicrographs of minerals taken by the three-colour process in polarised light, and the effect of these was most striking when shown with the help of a small arc lamp placed behind them. Mr. Boult's slides illustrated the teaching of Nature Study, while orchids were sent by Mr. H. Hammond, and other nature subjects by Mr. W. J. Lucas. There was also a series of slides of birds' nests taken in the bird sanctuary of the Ealing Branch of the Selborne Society by Mr. Poole and Mr. Webb. Quite a number of original pictures were hung on the screens, and perhaps the most striking of these were the coloured drawings illustrating the natural history of the Falkland Islands, by the late Thomas Havers, arranged by Professor Boulger, F.L.S., and the originals of the plates illustrating his book on "Familiar Trees."

The Nature-Study work of children was represented by exhibits from the school in connection with the Training College for the Deaf on the *Pure Oral* System, and by the Chislehurst Road School, Orpington. Other exhibitors were Mr. Stanley

E. Bailey, Miss Roget, and Mr. C. D. Soar. The proofs of the plates illustrating the second volume of the Ray Society's Monograph on Tunicates were shown by Mr. John Hopkinson, F.L.S., and plates from Webb and Sillem's Monograph of British Woodlice, by the authors.

In Geology, fossils were sent by Messrs. G. E. Dibley, James Francis and T. W. Reader. Bones of the Dodo came from the collection of Mr. Wintour F. Gwinnell, F.G.S., who also showed fossil fishes and volcanic minerals. Mrs. McKay sent dust from Martinique and St. Vincent, while Mr. Rudler's exhibit in this connection has already been mentioned.

There was quite a number of interesting archæological specimens of various kinds. Mr. F. G. Fenton had a large collection of prehistoric implements, while Mr. Kennard brought a series from Uxbridge.

Mr. F. W. Reader's contribution included bone skates and pin polishers. Mr. H. H. Poole brought a charter of Richard I., and Mr. F. J. Kingston old leather shoes. Mr. Bidwell's series of English betrothal gifts deserves special mention. These were mostly wooden objects carved by young swains for their ladyloves, and many took the form of stay busks. A curious fifteenth century tile from West Hendred Church was shown by Mr. A. B. R. Wallis, and horse-bells and photographs illustrating the way in which they were mounted, were contributed by Mr. W. Lawrence. Some coins lent by the Honorary Secretary were arranged so as to give an idea of the history of a penny, and the evolution of the figure of Britannia.

Mr. Bernard Gomme displayed, on behalf of the London Topographical Society, a series of the fine maps which this body has reproduced. Prints of brass rubbings belonging to Miss A. L. M. Gibb, were hung up, and various objects of native workmanship were sent by Mr. Shaw Crompton, R.I., Mrs. McKay, and Mrs. A. B. R. Wallis.

Meteorological instruments formed the exhibit of Messrs. Lander and Smith, while a diagram illustrating the rainfall in London was prepared by Mr. J. H. Curtis. Among publications on view were the Nature Knowledge leaflets of the Agricultural Education Committee and bound volumes of Nature Notes (the magazine of the Society) exhibited by the Publishers, Messrs. Bale, Sons and Danielsson. There was also the prospectus of the "Country in Town" Exhibition, specimen copies of "Knowledge," and some small Nature books contributed by Mr. E. A. Nash.

Mr. Franz Zeidler's Bijou Orchestra gave as much pleasure as it did last year: Messrs. J. and J. Hopkinson, Ltd., kindly lent the grand pianos; while the refreshments were supplied by Messrs. Moon, Field and Co., of Ealing.

The following ladies and gentlemen formed the Conversazione Committee:—Mrs. Percy Myles, Professor Boulger, Dr. Dudley Buxton, Messrs. J. Shaw Crompton, R.I., J. F. Davie, C. M. Mühlberg, E. A. Nash, H. H. Poole, F. W. Rudler, I.S.O.,

J. Walker, and the Honorary Secretary, and they received much assistance during the Soireé from Mr. W. Lawrence, Mr. T. Sedgwick, and Mr. R. Marshman Wattson, who kindly acted as additional stewards.

ANNUAL GENERAL MEETING.

THE Annual General Meeting was held at 20, Hanover Square, on the evening of May 30. Dr. Dudley Buxton, Chairman of the Council, presided. Mr. Macleod Yearsley raised the question as to whether the meeting was legal, seeing that the notices had not been sent to each individual member. As notices had always been given in the past through the Magazine, the Chairman over-ruled the objection and the meeting proceeded.

The annual report and balance sheet was adopted.* The Rt. Hon. Lord Avebury was re-elected President, and the Vice-Presidents were also re-appointed, with the addition of the Rev. R. Ashington Bullen, as follows :—

Vice-Presidents.

O. V. Aplin, F.L.S.
George Avenell.
Prof. G. S. Boulger, F.L.S., F.G.S.
The Hon. Mrs. R. C. Boyle.
The Right Hon. James Bryce, M.P.
The Rev. H. E. U. Bull, M.A.
The Rev. R. Ashington Bullen, B.A., F.L.S.
Charles Burt, J.P.
Dudley W. Buxton, M.D., D.Sc.
His Grace the Archbishop of Canterbury.
The Hon. Sir John Cockburn, K.C.M.G., M.D.
Alfred T. Craig.
Fred Enock, F.L.S., F.R.M.S.
W. Warde Fowler, M.A.
The Right Hon. Sir Edward Fry.
The Most Noble the Marquis of Granby.
The Right Hon. Sir Edward Grey, M.P.
The Rev. Professor Henslow, M.A., F.L.S.
Mrs. Arthur Hill.
Sir Robert Hunter, M.A.
Sir Harry Johnston, K.C.B.
G. B. Longstaff, M.D.
A. Holt Macpherson, M.A., B.C.L., F.Z.S.
Mrs. Martelli.
William Henry Maw, M.I.C.E., P.R.A.S., F.R.M.S.
The Right Hon. Lord Montagu of Beaulieu.
G. M. Murray, F.R.S., F.L.S.
G. A. Musgrave, F.Z.S., F.R.G.S., (*Founder*).
Mrs. G. A. Musgrave (*Founder*).
Mrs. Percy Myles.
J. L. Otter.
Earl Percy, M.P.
Mrs. E. Phillips.
The Rev. Canon H. D. Rawnsley, M.A.
The Hon. Lionel Walter Rothschild, Ph.D., M.P.
R. Bowdler Sharpe, LL.D., F.L.S.
The Right Hon. the Earl of Selborne.
The Right Hon. the Earl of Stamford.
R. Marshman Wattson.
W. Whitaker, B.A., F.R.S., F.G.S.

There being fourteen nominations for the twelve seats on the Council a ballot was taken, which resulted in the election of

* The Report and Balance Sheet will appear in the August No. of NATURE NOTES.

Twelve Councillors.

George Rowland Blades, F.R.G.S.	Mrs. McKay.
J. Shaw Crompton, R.I.	C. M. Mühlberg.
F. A. Currey.	E. A. Nash.
Norman Gray, P.A.S.I.	F. W. Rudler, I.S.O., F.G.S.
John Hopkinson, F.L.S.	Percival Westell, M.B.O.U.
Peter Lawson, F.R.M.S.	A. B. Wilkinson.

Mr. Hall and the Rev. H. N. Hutchinson kindly acted as scrutineers, and while they were counting the votes, Dr. Dudley Buxton gave the address on "The Cult of the Selbornian," which appears on another page.

SELBORNIANA.

Our Contents.—The Editor regrets that owing to pressure on our limited space he has been again obliged to hold over all reviews and many interesting papers he has received.

A Pilgrimage to Selborne.—Mr. H. M. Tomlinson contributes to the *Morning Leader* a sympathetic article with this title, from which we take the following passages:—

"You get out at Liss Station, and Selborne is six miles off, the way I went. Turn to the right outside the Station, crossing the line. Make for Hawkley. At Hawkley, ask for Van. (The road turns to the left. They will try to persuade you to get to Selborne *via* the road to the right, for it is shorter. Do not. My route is the longer way. But, praise the flintstones, I saw but one pedestrian—really a child skipping—and not a motor or a bicycle all the time. There was nothing in a hurry the whole distance.)

"The road slopes up almost from the Station, a mild ascent, and you wonder, when you look back and see the country spread behind you to the dim undulations of the South Downs, why it is you have not been panting hard. The path seems to have carried you up.

"At a glance, there are wide miles of tranquil, sunny England. You know what patriotism is then.

* * * * * *

"Still above the world went the path right into a turquoise sky, which seemed close enough to be only a blue screen just behind the steep escarpments and ridges of grey sandstone. You thought, if you went far enough, you would go into it. The path was cut through grey rock, ancient architecture in ruins, fringed with ferns, festooned with dark ivy, and painted with sage-green and orange lichens. In the talus and humus below the rock the violet lamps of the ground ivy were shining; wherever it was damp there was a mauve haze of lady's smock, everywhere were yellow constellations of primroses, and now and then you stopped to gaze at what seemed a tiny hole in the bank which went right through the earth, and betrayed a fragment of the intense sky of the antipodes. It was a violet beneath the herbage.

* * * * * *

"Did you ask whether I saw Selborne? I did. I saw it struggling under the same old hanger of beech trees. There was the Plestor, a sycamore in the centre, rising to the old church, which is mostly hidden in an ancient yew. I saw the Spring at the end of the village. And I saw the Wakes, Gilbert's old home. It is still there, and more also. It has now some interesting windows in pink and blue frosted glass. I may say I left Selborne at once.

"It is far better dreamed about at home. Just beyond the Spring a traction-engine smothered me in dust; and when that was brushed off, a flying motor-car came straight at me, hooting as it came, and put the dust back again, and left a stink behind. I was on the main road to Alton, you see. I could once walk nearly six miles an hour. I know I tried hard to do it again."

We sympathise with Mr. Tomlinson, but if he will venture again, climb the zigzag or the Bostal to the Wadden and the

Common behind the Hanger, and return to Alton from the Churchyard by way of the Lythes, he may enjoy the ruralities of the environs of Selborne undisturbed by philistinism or motor-cars.

Wild Birds' Protection Order.—We have received from the Home Office an Order, dated April 7, protecting the eggs of Bittern, Buzzard, Dipper, Dotterel, Peregrine, Goldfinch, Lesser Black-backed Gull, Heron, Kestrel, Kingfisher, Merlin, Owls, Plovers, Raven, Sheldrake and Woodcock in Westmoreland, and repealing the Order of May 18, 1900.

Bird Protection in Ceylon.—"Ceylon is setting a good example in drawing closer the regulations concerning the wanton destruction of rare birds; not only are penalties exacted for culprits caught *flagrante delicto*, but even the possession of skins and feathers is now deemed sufficient for conviction. The Straits authorities also are bestirring themselves, though rather late in the day, and we hope all India will be aroused to the necessity for more strictly prohibiting the extermination of our attractive warblers and brilliant-hued birds."—*Indian Field.*

Railway-Side Advertising in the States.—The display of advertising bulletins familiar to everyone who has ridden on the Pennsylvania railroad between New York and Philadelphia is said to be the most extensive exhibition of its kind in the world. This route is a favourite with advertisers, because at no other point in the United States is railroad travel heavier. There is the huge profile of two locomotives, head to head, the rays from headlights forming a diamond on which is painted the advertisement of Searchlight Matches. In the next meadow the eye suddenly falls on a herd of galvanised iron cows grouped on the grass, each cow having a single letter of the phrase "Horlick's Malted Milk." Giant bullfrogs, twenty feet high, in profile, advertise the cough remedy "Frog-in-Your-Throat." Some time ago the Pennsylvania Railroad planted a hedge on both sides of its right of way, and it was stated that this, in five years, will cut off the view of all this advertising. But it will have to grow to be a remarkably high hedge to accomplish this, owing to the character of the country. Perhaps legislators may reduce the advertising display before this happens. There seems to be no question in the minds of advertisers as to the profitableness of such advertising, for the same firms and commodities are represented year after year.—*Printers' Ink.*

Draining Burnham Beeches.—Mr. E. T. Cook, Editor of the *Garden*, writes as follows in the *Times* of May 16. We fully sympathise with his protest.

Sir,—Will you allow me to protest against the unnecessary draining of the natural bogs in Burnham Beeches? As those who love these beautiful acres know well, the bogs are the home, or were, of countless moisture-seeking flowers, which revel in the mossy and spongy soil. These swampy spaces are not a source of danger to the public, and there is no reason whatever why this destruction to wild flower life should continue. If there is one place that should be innocent of such unpleasant interference as this it is the famous old forest of Burnham.

I remain, yours obediently,

20, *Tavistock Street, Covent Garden.* E. T. Cook.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

New Members.—*Central Society.*—The following members were elected at the last Council Meeting: E. J. Bedford, Esq.; Miss Burdon; F. A. Canton, Esq.; Caermarthenshire Antiquarian Society; Miss A. C. Esch; Miss A. M. Ferrier; Percy E. Frost, Esq.; E. C. Goulton, Esq.; John Griffiths, Esq.; Charles Guttman, Esq.; Miss Dempster Jones; G. A. Laking, Esq.; Frederick Metz, Esq.; D. M. Richards, Esq.; Miss L. Russell; A. W. Simpson, Esq.; Miss Florence Saunders; O. C. Silverlock, Esq.; Arthur B. R. Wallis, Esq.; W. Seawell Ward, Esq.

Ealing Branch.—Miss Ella Astbury.

Hampstead Branch—Miss B. Dismorr; H. P. Godsel, Esq.; L. A. Lawrence, Esq.; Miss E. M. Okey.

Subscriptions.—The Council has much pleasure in acknowledging subscriptions of greater value than 5s. from the following members: G. A. Musgrave, Esq., £1 1s.; Mrs. Musgrave, £1 1s.; Mdlle de la Rive, 6s. 6d.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings of July 16th and August 20th, for the purpose of issuing books to members.

NEWS FROM THE BRANCHES.

Abinger and Shere.—On Saturday afternoon, May 19, a ramble was arranged for the members of the Abinger, Shere and Peaslake branches of the Band of Mercy. We were placed under Professor Boulger's guidance and were accompanied by a few adult Selborinans, some of whom had arrived by train to join in the walk. Past Crossways Farm of Meredithian fame, to Abinger Mill with its old-world porch of stately yews, we plunged under the green beeches of Townhurst woods, and so up Hollow Lane to Abinger Common and its alluring pump. A party of some fifty, we were a straggling affair, but yet, by dint of besieging our preceptor with questions, succeeded in gleaning a good many facts botanical on the way. At Abinger Common we were welcomed by Mr. and Mrs. Redgrave, the former of whom had accompanied us on our ramble. Mr. Redgrave had arranged for our inspection a small but very valuable series of old herbals and other Natural History books. We did full justice to the tea which they very kindly provided for the whole party, and then had the pleasure of listening to an address by Professor Boulger. He sketched the life of John Evelyn, who began his education in the porch of Wotton Church, continued it at Padua, where he formed a collection of Italian plants, and on his return to England wrote a number of scientific books, and among them "Sylva," a work on the cultivation of trees. The lecturer informed us that the Beeches, so common in these parts, were in truth to a large extent an importation due to Evelyn's initiative; and pointed to and explained an interesting fact, viz., that the clipped Beech, such as is seen in hedgerows, retains its leaves throughout the winter, while the unlopped tree is forced to shed them. At the close of the address a hearty vote of thanks was given to the lecturer and also to Mr. and Mrs. Redgrave; and then, well content with our afternoon, we parted and wended our several ways homewards. Among the more interesting plants observed, mostly escapes from cultivation, were *Chrysospleninm oppositifolium*, *Arenaria balearica*, *Saponaria officinalis*, *Geranium phæum*, *Impatiens fulva* and *Sedum reflexum*.

North Middlesex (Junior).—This branch has commenced in earnest with its summer rambles. A number of the members have taken up the study of Aquaria, and the outings have principally taken the form of pond dipping, three such rambles having taken place under the respective guidance of Miss E. M. Grint, Miss Grace M. Grint, M.C.S., and Miss Ethel Rogers. Mr. C. M. Hall, M.M.S., has been helpful in naming and identifying the various molluscs and other aquatic objects found. It is intended to continue these rambles during the summer months, junior members acting as guides.

It is with much regret that the resignation of the Secretary, Miss Ethel M. Grint, on account of extra scholastic duties taking up the whole of her time, has been received. Mr. Hall has appointed her sister, Miss Grace M. Grint, as her successor, and Miss Lucy Seaman as Librarian and Registrar.

EXCURSIONS.

Saturday, May 19.—A party of twenty-five Selbornians met Mr. W. Percival Westell, F.R.H.S., M.B.O.U., at Berkhamsted Station, and a move was at once made for the Castle grounds, where, in the past, so many stirring historical scenes have been enacted. The walls of the castle are still to be seen from the delightful circular walk which runs round the grounds. The partly double, partly triple moats are to-day still visible, and here and there between the ash and beech trees one sees a mass of ivy-covered wall, such fragments being all that remains of the famous fortress. William the Conqueror occupied Berkhamsted soon after the Battle of Hastings, and the castle is mentioned in Domesday. As a royal castle it was granted to Thomas à Becket when Chancellor, and to Isabella, wife of King John. The favourite, Piers Gaveston, resided here, and Chaucer was at one time clerk of the works. The party of Selbornians sat under the grateful shade of the trees while Mr. Westell imparted this and other information, and steps were then directed towards Berkhamsted Common, where the glories of the golden gorse and the voices and presence of summer and resident birds lent beauty and animation to the scene. Ashridge Park was then entered, and, as avenue after avenue of stately beeches was traversed, nothing but admiration was expressed as to the sylvan beauty of Earl Brownlow's demesne. Groups of red and fallow deer were noticed through the trees, and after a walk of six miles the party emerged into the open country, and suddenly found the delightful little village of Aldbury snugly nestling in the valley. After a steep descent over some chalk hills, where the gentian loves to grow, the village was reached, and the welcome sign of "The Greyhound" came into view. Here tea was taken, and the party then visited the old stocks and whipping post still standing in a splendid state of preservation in the village street; watched the swallows and martins and swifts; admired the trees towering on the high ground towards the monument erected in 1832 in memory of the Marquis of Bridgewater, known as "the father of British inland navigation"; and pictured in their minds some of the scenes in Mrs. Humphrey Ward's book, "Marcella," this famous authoress having a house in this old-world spot. After an hour or so in and around Aldbury a start was made for Tring Station. This ramble opened up a new district for the Society, and those who availed themselves of it were unanimous in expressing the great interest which it afforded.

Saturday, May 26.—In consequence of a very wet morning only a very small party assembled at Leatherhead Station. The walk, however, was greatly enjoyed by those who, under the guidance of Mr. A. B. Wilkinson, ventured to explore the beautiful country, the rain fortunately keeping off during the afternoon. Amongst the places of interest visited were the old Mill Pond at Fetcham, the beautiful little church belonging to the same village, and afterwards those at Great and Little Bookham, the former rich in its old brasses and inscriptions, and the latter overshadowed by its historical Yew tree. The best thanks of those present are due to Mr. H. Adkins, of The Tyrells, for so kindly entertaining the party at tea, and also to the Misses Soxley, who acted as guides to the interesting little church at Little Bookham.

Saturday, June 9.—Favoured by the same delightful weather as last year, a party of thirty-four joined Mr. Mühlberg's ramble to Roundabout and Petts Wood. The singing of the many birds—now in their very best song—was one of the pleasures of the afternoon. Specially noticeable was the Blackcap, whilst several other species were also distinguished by the party. Many plants were collected, amongst them being *Orchis latifolia*, the Marsh Orchis, *Habenaria bifolia*, Butterfly Orchis, and *Listera ovata*, the Tway-blade. A piece of water gave opportunity for the study of pond-life, and a good many specimens were brought to light and kindly named for the party by Mrs. Douglas Wilson. Tea was taken at Mrs. Dabner's, and after tea the party visited the Chislehurst Caves, so interesting, not only from the geologist's point of view, but also from that of the archæologist and naturalist, extending as they do some fifteen miles under Chislehurst, and remaining still, in spite of the efforts that have been made to elucidate their history, a puzzle to men of science. The two specimens of *Ichthyosaurus* embedded in the chalk—one of them 22 feet long and nearly perfect—are of the very highest scientific value and interest; the guide asserts them to be the only two specimens in England.

FORTHCOMING EVENTS.

COUNCIL AND COMMITTEE MEETINGS.

Monday, July 16.—Publications Committee at 5.30 p.m.
Tuesday, July 24.—Council Meeting at 5.30 p.m.

EXCURSIONS.

Central Body.

Saturday, July 7.—Weybridge and St. George's Hills. Meet at Weybridge Station at 3.10. Trains leave Waterloo (Main Line) at 2.28, and Clapham Junction at 2.27 p.m. *Passengers from Clapham Junction change at Surbiton.* Return tickets 2s. 10d. Tea at Swiss Cottage at 5 p.m. Further ramble to Fox Warren optional. Frequent return trains. Guide, Dr. Henry Willson.

Saturday, July 14.—Rickmansworth and the Chess Valley. Train leaves Baker Street (Met. Ry.) at 2.20 p.m. Take return tickets to Rickmansworth, 1s. 11d. Rickmansworth Park, Sarratt Bottom, tea at the "Cock Inn," 1s. each, returning *via* Micklefield, Chandler's Cross and Croxley Green. Walking distance about five miles. Guide, Mr. George Watts.

Saturday, July 21.—St. Albans and Verulam. Train leaves St. Pancras (Midland Ry.) at 2.10 p.m. Take cheap return tickets to St. Albans, 2s. At the Cathedral, the Old Clock Tower, the Monastery Gateway, and at the Museum short papers will be read. Tea at the old "Fighting Cocks" Inn. After tea visit the site of Verulamium and St. Michael's Church. Return train at 9 p.m. Guide, Mr. W. Percival Westell, F.R.H.S., M.B.O.U.

Saturday, July 28.—West Drayton and Iver Water Splash. Meet at West Drayton Station on arrival of train leaving Paddington at 2.30 p.m., Ealing at 2.43 p.m. Return fare, 1s. 5d. Guide, Mr. Wilfred Mark Webb, F.L.S.

Saturday, August 4.—No ramble, on account of the August Bank Holiday.

Saturday, August 11.—Hayes and Keston. Guide, Mr. B. T. Lowne. Full details in the August number.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Hon. Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

ANSWERS TO CORRESPONDENTS.

S. P. H.—It is easy to describe the structure of the malformed rose; but not to assign a cause for it. The axis is prolonged and bears several recurved flowers beyond the main flower. This "growing through," as gardeners term it, seems due to stimulation after arrest, perhaps after the buds are formed. Drought, followed by wet, or late manuring might bring it about. It is common in rhododendrons.

S. U. Body.—The pink flower is *Geum rivale*; but the other we are unable to identify from the little bit sent.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 200. AUGUST, 1906. Vol. XVII.

TWENTIETH ANNUAL REPORT, 1905-1906.

Adopted at the Annual Meeting, May 30th, 1906.

I.—General.

The position which the Selborne Society has successfully attained during the last few years continues to improve, though in order to do justice to its many objects, more active workers and larger funds are still required.

Once again by the kind permission of the Civil Service Commission and His Majesty's Office of Works, the Annual Meeting and Conversazione was held in Burlington Gardens and proved more interesting and successful than any gathering of the kind organised by the Society during recent years.

Gilbert White's Letters.—Although the resources of the Society did not permit it to acquire the series of letters by Gilbert White which came into the market during the year, it is pleasant to be able to record that they were purchased by one of its members, Mr. Andrew Pears, and therefore will remain in this country.

II.—The Study of Natural History.

Prizes.—With a view to encouraging the study of Nature, more particularly in Secondary Schools, the Council has decided that the prizes kindly offered by some of its members shall be competed for by Associates of any of the Junior Branches and by pupils in Secondary Schools in London and other places where there are Branches of the Society. The full details of the Competitions will be given in Nature Notes.

Nature Study.—There was no opportunity for promoting a Nature Study Exhibition in London during the year, but the Secretary served on the Committee, which hoped to organise a "Country in Town" exhibition during last summer at Whitechapel. The idea has not been abandoned, and he is acting as Honorary Secretary to the body which, with Earl Carrington

as President, intends to bring it to a successful issue during the coming summer. Mr. Wilfred Mark Webb also visited the Nature Study Exhibition held by the Bath and West of England Society in connection with its great show at Nottingham, and contributed an article on the subject to the *Morning Leader*, which at the request of the Bath and West Society has been reprinted in its annual journal. Mr. Webb also gave the valedictory address, which brought to a close the Nature Study Course at the Swanley Horticultural College, and discussed the connection of Nature Study and the School Museum, in a paper read before the assembled teachers of Surrey at the Educational Conference last July.

The South Eastern Union of Scientific Societies.—The Selborne Society was represented at the Reigate Congress by Mr. J. L. Otter (the Treasurer) and by the Secretary. Professor Boulger made a report on the replies received in answer to the circular previously sent out with regard to plant protection. The question of obtaining reduced fares from the railway companies for members of scientific societies was one which occupied the serious attention of the delegates.

The Field Club.—The summer excursions of the Society have always been looked upon as one of the most important means of encouraging the study of natural history. Twenty-two rambles were arranged and twenty-one of them carried out successfully. The average attendance was slightly larger than last year, being thirty-two, as against twenty-eight. The success of the rambles during the last six seasons has been almost entirely due to the efforts of Mrs. Percy Myles, who has acted as Hon. Secretary of the Field Club since March, 1899. It was with great regret that the Council received the resignation of Mrs. Myles owing to her being physically unable any longer to continue the work; but as she has accepted the Chairmanship of the new Excursions Committee, the Society will still have the benefit of her experience. The thanks of the Society are due not only to Mrs. Myles for her most valuable services, but also to Mr. Poole, who has assisted her during the last two years, and to those gentlemen who are good enough to act as conductors at the meetings, of which a list is here given.

Selborne Field Club Meetings, 1905.

Date.	Place.	Guide.	No. of Members present.
April 29	Chipstead ... (Chipstead and Howe Green)	Mr. Matthew Hunt	22
May 6	Rickmansworth ... (Moor Park and Batchworth Heath)	Messrs. C. M. Hailes & Geo. Avenell	84
13	Leatherhead... (Leatherhead and Mickleham)	Mr. A. B. Wilkinson	27
20	Bickley ... ... (Roundabout Wood and Chislehurst Common)	Mr. C. M. Mühlberg	25
27	Potter's Bar ... ... (North and South Mimms)	Mr. E. A. Nash	37

Date.		Place.	Guide.	No. of Members present.
June	3	Chenies ... ... (Chalfont Road and Chenies)	Mr. J. E. Whiting	61
	17	Clandon ... ... (Clandon to Newlands Corner)	Mr. A. B. Wilkinson	16
	24	Guildford ... ... (Guildford to Compton)	Mr. E. Chapman	30
July	1	Watford ... ... (Cassiobury Park to Chandlers Cross)	Mr. W. Percival Westell, M.B.O.U.	29
	8	Chalfont St. Giles ... (Jordans and Chalfont St. Giles)	Messrs. L. Douglas Wilson and Geo. Avenell	50
	15	Iver ... ... (West Drayton and Iver)	Mr. Wilfred Mark Webb, F.L.S. ...	28
	22	Weybridge ... ... (Caneswood and Shepperton)	Dr. Henry Willson	25
	29	Coulsdon ... ... (Farthing Downs and Chaldon)	Mr. H. H. Poole	31
Aug.	12	Walton Heath ... (Tadworth to Headley)	Mr. Matthew Hunt	12
	19	Northwood ... ... (Eastcote and Ruislip)	Mr. E. A. Nash	12
	26	Uxbridge ... ... (Uxbridge and Denham)	Mr. Geo. Avenell	48
Sept.	2	Oxshott ... ... (Oxshott and Black Pond)	Mrs. Percy Myles & Mr. H. H. Poole	14
	9	Chingford ... ... (Abandoned owing to heavy rain)	Mr. C. Nicholson	—
	16	Woldingham ... (Titsey Hill and Oxted)	Mr. C. M. Mühlberg	27
	23	Woldingham ... (Woldingham and Chelsham)	Mr. Matthew Hunt	12
	30	Richmond Park ...	Prof. G. S. Boulger, F.L.S., F.G.S.	51
Oct.	14	Loughton to High Beach. Joined the Essex Field Club ... (Fungus Foray in Epping Forest)		—

Winter Meetings of the Society.—The Excursions Committee, of which Mr. Hubert H. Poole has kindly acted as Honorary Secretary, arranged the meetings, of which details are here given and which were of a character similar to those which Mrs. Percy Myles instituted and was good enough to organise in the past.

Date.		Place.	Guide.	No. of Members present.
1905.				
Nov.	11	Natural History Museum (Palæontological Department)	Dr. C. W. Andrews	35
	18	Salters' Hall	Mr. S. W. Luard	80
	25	Fur and Skin Warehouse...	Mr. C. M. Mühlberg	70
Dec.	9	The Guildhall ... ... (With the South Eastern Union of Scientific Societies)	Mr. C. Welch, F.S.A. ...	50
1906.				
Jan.	13	Natural History Museum... (The Historical Book Collection)	Prof. G. S. Boulger	31
	20	Fishmongers' Hall ...	Mr. J. Wrench Towse ...	85
Feb.	17	Westminster School ...	Mr. George Avenell	30
	24	St. John's, Clerkenwell ...	Mr. H. W. Fincham	35
Mar.	3	Ivory and Shell Warehouse	Mr. A. Van Noorden	64
	17	Ironmongers' Hall ...	Mr. E. H. Nicholl	80
	24	The Horniman Museum ...	Dr. Harrison	28
April	7	Syon House, Isleworth ...	Prof. G. S. Boulger	84

III.—The Protection of Animals.

Fur-bearing Animals.—The leaflet prepared by Mr. Mühlberg on the extermination of fur-bearing animals, and mentioned in the last report, has now been printed and can be obtained from the Honorary Secretary.

The Ealing Bird Sanctuary.—The enclosure which the Ealing Branch has protected for the last three years was exceedingly successful last season. Some hundreds of nests were built and many of these were kept under observation until the young birds flew. The Committee of the Branch is redoubling its efforts this year, and is inviting the help of all interested in the protection of our British birds.

The Uses of Feathers for Ornament.—It will be remembered that at the last annual meeting Lord Avebury in his address made a special appeal on behalf of the "egret," the plumes of which, under the name of "ospreys," are worn to such an extent that the birds, which produce them only in nesting season, are becoming exterminated. These feathers seem to have become even more fashionable lately, but the gracious and welcome message from Her Majesty, Queen Alexandra, to the Royal Society for the Protection of Birds, should do much to discourage their use.

It is addressed to the Duchess of Portland and runs as follows:—

"The Queen desires me to say, in answer to your letter, that she gives you, as President, full permission to use her name in any way you think best to conduce to the protection of birds. You know well how kind and humane the Queen is to all living creatures, and I am desired to add that her Majesty never wears osprey plumes herself, and will certainly do all in her power to discourage the cruelty practised on these beautiful birds."

Numbers of other feathers of an ornamental character are being sold, and although ostrich plumes, to which no exception can be taken, are largely worn, others, such as those of the birds of Paradise, are unfortunately much in vogue.

IV.—The Protection of Plants.

Professor Boulger brought this subject before the meeting of delegates of Corresponding Societies of the British Association, and, after considerable discussion, it was agreed to recommend the issue of a circular by the Association to teachers, and the preparation of a "Reader" for schools.

V.—Places of Antiquarian Interest and Natural Beauty.

Warley Woods.—The members will learn with much pleasure that the scheme for the preservation of Warley Woods, which was mentioned in our last report, and was initiated by the

Birmingham Branch, has been successfully carried out. It is hoped, moreover, that the whole of Warley Park may also be secured for the benefit of the public.

Gowbarrow.—The Society is gratified at the result of the efforts to secure this valuable open space. It is hoped that Canon Rawnsley may be successful in his efforts to secure the small area adjacent to the former, which in his practised judgment is necessary to round off the Gowbarrow and Aira Valley estate.

Cheddar Gorge.—The Society has heard with regret that no action was taken on the warning which it circulated some time back as to the disfigurement of this beautiful spot by quarrying operations. The damage done has now culminated in an extensive fall of rock on one side of the gorge, owing apparently to the works there carried on, which has resulted in a disfigurement far more serious than that previously existing.

Hanwell Recreation Ground.—Practically the only picturesque spot on the Great Western Railway between London and Taplow is just below Hanwell Station. Tradition says that Queen Victoria used to have her trains slowed down at the place in order to admire the view across the rising ground to the rectory and church. The fine clump of elms situated in the recreation ground which has come into the foreground have been spoilt at the instance of the Urban District Council, though before the work of mutilation had gone very far the local Branch entered a very vigorous protest. This was practically unavailing, for only two or three trees have been left in their natural form. As the District Council claimed to be acting under the advice of an expert, the Branch invited Professor Boulger and Mr. George Nicholson to give their opinions, which were entirely against the wholesale lopping, and were forwarded to the authorities in the hope that they might be led in the future to pay more attention to similar protests.

The Advertisements Regulation Act.—This Bill was passed without a division through all its stages in the House of Lords, but from want of time it failed to reach the "second reading" stage in the House of Commons. By its provisions local authorities would be enabled to control hoardings above the height of twelve feet, to prevent the display of any advertising notice which might injuriously affect the amenities of a public park or pleasure promenade, or might disfigure the natural beauties of a landscape, as well as to prevent the fixing of advertisements on private property without the consent of the owner. A point of great importance is that the organisations which represent the bill-posting and other associated interests are now anxious to see the measure become law as soon as possible. The Bill will be introduced again in due course, and has the support of

many influential Members of Parliament. The Secretary of the Selborne Society represents this body on the Executive of the National Society for Checking the Abuses of Public Advertising, which is responsible for promoting the Bill.

VI.—Publications.

"*Nature Notes*."—All concerned have been striving during the year to improve the Magazine, and it will be allowed that their efforts have not been without some measure of success. For instance, the numerous complimentary references in the general Press show that the Magazine occupies an important place in the promotion of the study of Nature. More remains to be done, and the Council would still welcome any suggestions and an increase in the number of interesting contributions. The arrangement of the contents has recently been somewhat altered, partly in the hope of making it appeal more to those who are not yet members of our body. An alteration has also been made in the cover of the magazine and it is now sent out in envelopes instead of wrappers. Professor Boulger still continues to act as Editor, and the hearty thanks of the Society are due to him for his continued services.

Prospectus.—The Society now publishes an illustrated prospectus, which will be sent to any address on application to the Secretary.

VII.—Library.

In accordance with a suggestion thrown out in the last report considerable additions have been made—chiefly owing to the generosity of members—to the collections of the editions of the "Natural History of Selborne." A copy of the frontispiece from the first edition exhibited at the last Conversazione has also been purchased.

Members continue to make use of the Library and the thanks of the Society should be accorded to the donors of the various volumes that have been presented, and to the Honorary Librarian, Mr. Hubert H. Poole, who has attended to this branch of its work.

VIII.—Organisation.

Membership.—The members of the Society on March 31, 1906, numbered 1,801.

Rules.—One or two paragraphs of doubtful interpretation having been discovered in the Rules, the matter has been referred to the General Purposes Committee by the Council for consideration.

Officers.—The Rev. R. Ashington Bullen, who has acted as Chairman during the year, having gone to live near Brighton, has resigned his office, and Dr. Dudley Buxton has been elected by the Council in his stead. As already indicated, Mrs. Percy Myles has become Chairman and Mr. H. H. Poole Honorary Secretary of the new Excursions Committee.

District Secretaries.—The Council would be very glad to appoint district secretaries in places where there are no Branches, in accordance with a suggestion made in the last report.

Affiliated Societies.—The Council has made the following arrangements with regard to Affiliated Societies :—

That if Affiliated Societies want affiliation and the Magazine (one copy), they shall pay not less than the minimum subscription, 5s.

If their members wish to attend the rambles of the Selborne Society, they shall pay an additional 5s. per annum for every five members who attend, on the understanding that notice of the number wishing to be present each time shall be sent to the Excursions Secretary.

In the case of Societies throwing open their evening meetings to local and branch members, the privilege of attending the rambles shall be accorded to them in return.

Junior Branches.—Two new Junior Branches have been formed during the year, the Tottenham Grammar School, and the Chippenham Secondary School. One Junior Branch, namely, that at Barmouth, has come to an end.

Branches.—New Branches have been established for Hammersmith and Fulham, and also for Blackburn. Brief accounts of the work which the Branches and Junior Branches have been doing are given below.

Bath.—At the Annual Meeting Colonel Skrine was re-elected President, and the resignation of the Honorary Secretary—Mr. W. C. Elwood—was accepted with great regret ; since then Mrs. Allon Tucker has been so kind as to undertake the work. The report of the Branch shows that a number of interesting rambles and lectures were arranged during the year. It is intended to develop the Natural History Section in the near future.

Clapton.—The following is the programme of lectures arranged and carried out by the Clapton Branch :—

1905.		Subject.	Lecturer.
November	18	"Pompeii"	Mrs. S. Douglas Wilson.
December	16	"Stones of English History" (Second Series)	R. Marshman Wattson.
1906.			
January	20	"Some Aspects of Plant Life and Death"	F. Gilbard, F.I.C., F.C.S.
February	17	"Some Recollections of Paris" ...	J. F. Briscoe.
March	17	Social Evening and Annual General Meeting. All with lantern illustrations.	

North Middlesex (Junior).—This Branch has had a prosperous year, meetings or field excursions having been held during the whole of the seasons. Two most enjoyable outings were those made to Cheshunt and St. Albans, the first under the guidance of Mr. W. J. Wade and the second in charge of Mr. W. Percival Westell, F.R.H.S., M.B.O.U. The Aquarian Section of the Branch has had profitable rambles along the banks of the River Lea, which they found to be a good hunting ground for aquatic insects, crustaceans and molluscs. These were generally under the direction of Mr. C. M. Hall, the founder of the Branch.

The following papers have been read, and demonstrations and addresses given during the year :—

1905.		Subject.	Lecturer.
May	12	"General Botany"	Mr. Moore.
,,	26	"Land Conchology"	Miss Grace M. Grint.
June	9	"Aquatic Entomology"	Miss Ethel M. Grint.
July	7	"Comparative Anatomy of the Vertebrata"	Mr. C. M. Hall.
Sept.	29	General Conversation on British Birds.	
1906.			
Jan.	19	"Life in Ponds and Rivers"	Mr. J. C. M. Grint.
Feb.	2	Address and Demonstration. "Management of Aquaria"	Mr. C. M. Hall.

(The two latter were at joint meetings of this Branch and that of Tottenham Grammar School.)

Feb.	23	Lecture, "An Hour in Bird Land" ...	Mr. W. Percival Westell, F.R.H.S., M.B.O.U.

After a correspondence which took place at the end of last year between Mr. C. H. Cox, B.Sc., of Tottenham, and Mr. Hall, it was decided that the two Branches should co-operate in their field and other work, and so far it appears that it will be to the mutual advantage of both Branches.

A children's section of the Branch was inaugurated on April 29, 1905, by Mr. Hall. Miss Ethel M. Grint was appointed Honorary Secretary. It has proved an unqualified success. Many friends have sent exhibits to the children's meetings, amongst whom may be named Mr. A. Ford, of Bournemouth; Mr. R. Bates, of Manchester; Mr. Brooks, Mr. C. M. Hall, and others. Many of the children have also made exhibits of an interesting character.

On Saturday, October 28, a tea party was given to the children, after which prizes were distributed. These were books kindly presented by friends of this section of the Branch, and were handed to the recipients by Miss Grace M. Grint.

The following papers have been read and demonstrations made at the children's meetings:—

1905.		Subject.	Lecturer.
Sept.	15	"British Land Shells"	Miss Grace M. Grint.
,,	29	"British Birds"	Miss Ethel M. Grint.
Oct.	14	"British Sea Shells"	Mr. C. M. Hall, M.M.S.
Nov.	11	"British Freshwater Molluscs"	Mr. Reginald Cadney.
,,	25	Paper on Domestic Pigeons	Mr. S. F. Harold.
Dec.	9	"British Amphibians"	Mr. J. C. M. Grint.
1906.			
Feb.	9	"Aquatic Insects"	Miss Ethel M. Grint.

A repetition of thanks must be given by the Branch to Mr. J. L. Wood, F.R.H.S., for the use of Brunswick Hall, and also his staff, especially Mr. Thos. Slater, who has always been ready to give his assistance when required.

Seaford (*Junior*).—A number of interesting expeditions have been made during the year, some of the most important being to—

Lewes Castle.
St. Pancras Priory.
St. Michael's Church, Lewes.
West Dean Church, and
Bishopstone Church.

Besides these, rambles have been taken over the Downs and along the coast.

Lectures have been kindly given by friends during the winter months. Special mention should be made of the one given by the Honorary Librarian of the Society, on "The Life and Work of Gilbert White and the Village of Selborne." This was illustrated by the Society's collection of lantern slides, and was much appreciated by the Associates.

Tottenham Grammar School (*Junior*).—The work of the Branch continues to flourish, thanks to the help received from the officials of the Clapton, Hampstead and North Middlesex Branches.

Joint meetings have been held with the last-named, and the thanks of the members are due especially to Mr. C. M. Hall, M.M.S., who has been the means of establishing an aquarian section.

Representatives have also attended lectures at the Clapton and Hampstead meetings, and the privilege so afforded has been duly appreciated.

Mr. Oliver G. Pike lectured to the School, on April 11, on "An Hour in Birdland." The boys were not slow in showing their appreciation in the usual manner, and we hope to hear Mr. Pike again next season.

Mr. E. Kay Robinson has also promised to come and lecture.

If any Selbornians would care to help, by lectures, lending books or slides, or conducting rambles, &c., such help would be gladly welcomed.

North Wilts Field and Camera Club (*Affiliated Society*).—During the summer many successful excursions took place. The first was to Avebury, when Silbury Hill, the British Stones and the ancient church were visited, under the guidance of Mr. D. Passmore. A visit to Oxford was arranged, when Mr. Mawdon Mowbray most efficiently conducted the party. Modern methods of bee-keeping were watched at a bee farm at Ogbourne. Mr. D. Passmore again guided the Club on their visit to Cirencester, when the Roman remains were examined—most interesting, perhaps, being the amphitheatre and Mr. Cripp's private museum. On other occasions the Club was entertained by the Rev. Walter Butt, by Mr. G. Avenell, and the Rev. Robeson.

At the winter meetings Mr. Oliver G. Pike lectured on "In Birdland with a Camera," and Mrs. Douglas Wilson on "Pompeii"; one of our own members described a visit to Russia, and another gave a lecture on "English Trees."

At the Annual Soirée a presentation of a roll-top writing desk was made to the Honorary Secretary, Mr. T. C. Davison.

The membership has increased to 130.

SUMMARY OF BRANCH PAYMENTS.

Made during the financial year ending March 31, 1906.

Branch.	Paid for NATURE NOTES.			Contribution.		
Abinger and Shere	£1	19	0	£0	11	6
Bath (1904)	4	0	0	3	0	0
,, (1905)	3	0	0	—		
Birmingham	10	16	8	3	7	0
Brighton (1904)	2	5	6	0	5	0
,, (1905)	3	0	8	0	5	0
Clapton (1904)	4	8	10	1	1	0
,, (1905)	4	8	10	1	1	0
Croydon	5	0	4	—		
Ealing (1904)	5	6	2	1	12	1
,, (1905)	5	12	8	1	8	1
East Riding (1904)...	1	16	10	0	10	0
,, ,, (1905)...	0	13	0	0	10	0
Farnham	1	19	0	0	17	0
,, ...	—			Donation 1	10	0
Hampstead	24	3	2	5	6	0
Rape of Lewes (1904)—balance	0	2	2	0	6	8
,, ,, (1905)	1	14	8	—		
"Richard Jefferies"	1	3	10	0	4	9
,, ,, ...	—			Donation 2	11	5
Rother Valley (Midhurst) (1904)	2	6	8	0	12	0
,, ,, ,, ...	—			Donation 1	10	0
Wimbledon	2	10	0	1	1	4
	£86	8	0	£27	9	10

Made since March 31, 1906.

Croydon	£5	12	8	...	—	

The subscriptions from the following Branches for 1905 have been paid in full, and these are included under the heading of subscriptions: Halifax, Kensington, Rother Valley (Petersfield), and Sutton.

The Selborne Society.

Dr. RECEIPTS AND PAYMENTS FOR THE YEAR ENDING MARCH 31, 1906. Cr.

	£	s.	d.
To Balance at the Bank, April 1, 1905	194	17	6
To Cash in hand, April 1, 1905	2	17	2
To Sundry Receipts—			
1905 Subscriptions—Balance ... £86 9 6			
1906 Subscriptions—on Account ... 147 9 3			
	233	18	9
Contributions from Branches	40	10	4
Donations	12	14	5
Sale of NATURE NOTES to Branches	90	10	11
Sale of Leaflets, Badges, &c.	2	8	9
Sale of Tickets, Conversazione	17	2	0
Interest on Deposit	0	3	2
	£595	3	0

	£	s.	d.
By Sundry Payments—			
Printing and Postage of NATURE NOTES and cost of Index for the Year	166	1	4
Editor and Secretary	55	0	0
Rent	15	15	0
Stationery and Printing	26	9	0
Petty Cash Payments	23	12	0
Annual Meeting Expenses	53	16	8
Library and Press Cuttings...	4	10	4
By Contributions—			
William Cole Recognition Fund	1	1	0
South Eastern Union of Scientific Societies ...	0	10	0
By Balance at the Bank, March 31, 1906—			
On Current Account (£150 since placed on Deposit)...	232	12	8
On Deposit Account	15	15	0
	£595	3	0

We have examined the above Cash Account with the Vouchers, and certify that it is correct.

26, THEOBALD'S ROAD,
GRAY'S INN,
May 26, 1906.

CRAIG & SON,
Chartered Accountants.
Honorary Auditors.

	£	s.	d.
Balance	248	7	8
	£248	7	8

	£	s.	d.
Liability to Members for NATURE NOTES to December 31, 1906, estimated at	125	0	0
Balance	123	7	8
	£248	7	8

NATURAL HISTORY NOTES.

371. Stoats Carrying Eggs.—So far from thinking Mr. Daubeny "unkind," I am glad that he has replied to my little note in the June number. May I first observe that I have never myself *seen* stoats carrying eggs in the manner described, nor had I before heard of it. I merely told the tale as related by a village lad. I have now sent Mr. Daubeny's note to Mr. Turner, our C.E. schoolmaster, who takes a keen interest in natural history, and encourages the children to do the same. He says, "I questioned the three boys very closely about their accounts of stoats and rats carrying eggs, and each one declared they had *seen* these animals in the position described. Walter Kemp said his father had several times seen rats being dragged along. Dunford said the rats he saw were taking a fowl's egg from a nest near the 'H.H.' stables." These are truthful straightforward lads whose word we have no reason to doubt. I should be extremely glad to hear more upon this subject, as I agree with Mr. Daubeny as to the difficulties of accepting the dragging-by-the-tail theory.

MARIE SOPHIE HAGEN.

Ropley, July 11, 1906.

372. Rats and Strawberries.—Our gardener has just killed a rat which was under the net on the strawberry bed. It had a blackbird in its mouth which it had just killed, and was so intent on its prey that it allowed the man to get quite near. Two or three years ago we were also troubled with rats eating our strawberries, and we found large piles of green strawberries which they had stored apparently in hopes of their ripening for future consumption!

Radwinter Rectory, Saffron Walden, July, 1906. AGNES M. BULLOCK.

[May this have been the work of voles?—ED. *N.N.*]

373. Squirrel Swimming.—On June 26 I was sitting on the low bank of the Upper Dart, where the river, some fifteen or sixteen yards across, runs over boulders in a deep glen, and looking up the stream I noticed a squirrel on a boulder stone near the middle of it. I did not see how he got there. He leaped from stone to stone to the further shore and disappeared, but returned almost directly, and came leaping back over the stones, till—perhaps a little more than half way across—they no longer afforded a bridge. The squirrel then put his nose down into the water, apparently to try the force of the current, which was very strong—instantly turned round, leapt back across the stones, ran a little way down the shore, coming towards me, and sprang over another bridge of stones, tried the water again with his nose, decided it was not safe, and repeated the whole pretty performance, running down the shore a little nearer to me. I think it was after his *fourth* trial that he at last plunged into the water and swam to shore, coming out a small draggled object. His anxiety to cross, his quick decision and alertness and grace of movement in the setting of this lovely reach of the Dart, made one of the prettiest and most interesting sights I have witnessed, and, not knowing that a squirrel could swim, I felt anxious for his safety, which he himself probably did not feel in the least.

ALICE A. E. FOWLER.

Kingham, July 9, 1906.

374. Cuckoos and their Young.—I am afraid Mr. F. M. Millard (*ante*, p. 128) and Mr. E. Kay Robinson, who refer to my note in the "Countryside," have misunderstood me when I said that the pair of cuckoos that circled round me used "violent cuckoo language." From what they write I believe they think that I meant that the two adult birds said "cuckoo" in a violent manner; but what I wished to imply was that they used the violent language of the cuckoo when threatening or scolding, that is to say, a peculiar chuckling noise which would be hard to describe. I heard one make a similar noise this spring soon after their arrival. It flew up to a tree upon which a flock of starlings had congregated, and was either startled by seeing such a number of birds together, or wished to frighten them away. At any rate, it "chuckled" at them and they all

flew away in a great hurry. Can Mr. Millard, or any other reader who has made a study of the cuckoo, inform me whether there is any difference in the threatening notes or sounds of the two sexes?

The Nurtons, Tintern, Mon., H. BIRD.
July 9, 1906.

375. Martin.—To-day I saw a neat little performance by a martin. It had captured a something which at the distance I could not quite make out, but which appeared to be a large moth or butterfly, and was doubtless intended as a tit-bit for the young folks at home. Watching its flight for a short time the something either made its escape or was accidentally dropped, when the martin, being equal to the occasion, with a graceful curve and a swoop recaptured its prey in mid air, and once again proceeded on its journey.

Clark Road, Wolverhampton, JOHN HORNE.
June 21, 1906.

376. Red Sparrow.—During the last two years I have frequently seen in this town a red sparrow. It has none of the markings of an ordinary sparrow, but is red all over. It is invariably seen in the same locality. Although occasionally alone it is generally in company with other sparrows of the ordinary sombre hue.

Wolverhampton, JOHN HORNE.
June 21, 1906.

377. Blue Tit.—I saw a little family affair from my dining room window, which I think I must tell you of. I have a board for feeding birds and under it a hollow log for "tits." Mr. and Mrs. Tit took possession of it in the early spring, and had their family, which must have been chiefly brought up on the cocoa nut, which was just beside their hall door. Well, one day as we were at luncheon we saw an unusual excitement going on at the "door." Mr. and Mrs. Tit were bustling about the entrance, and soon after they both flew away. When they had gone, we saw the head of one of the family peering out, but it was very hastily withdrawn; again it looked out and again it seemed to withdraw on looking down from the door. At last the young bird took courage and flew on to a branch opposite, just by our window. Then five little tits—blue tits—went through the same performance, and we resigned ourselves to luncheon, thinking the whole family had gone. But no, the parents came back, and one went into the nest, and on its coming out again both flew away, and then we saw another little head. The same thing was gone through, looking down in fright at the distance to the ground and retiring again, till at last it did as the others did and flew out, and we never saw anything of them after. They never returned to the nest, as I think most birds do. The sparrows succeeded in making the "door" larger and now have a nest of young ones there. I do not take the same interest in them that I did in the blue tits, but I do not like to evict them.

Charnwood Forest, W. R. T.
June 19, 1906.

378. Moorhen.—On May 20, 1905, I found a moorhen sitting on eggs in an old magpie's nest, 15 feet above the water, at Marsh Barton, Swimbridge, N. Devon.

W. SHELLEY.

379. Birds on the Riviera.—The martins and swallows were about the Riviera in the recent cold spring weather before March was out, and the swifts (whose empire is the air, yesterday Africa, to-day France, to-morrow it may be England), appeared about ten days afterwards. The summer migratory warblers arrived, I think, about a fortnight earlier than with us, shortly to depart further northwards, each she and he carrying their music with them—their places being quickly taken by new-comers in the Grove Orchestra—whilst nightingales made musical the April nights. In Var, and also on Marguerite Isle, I noticed that beautiful bird, the hoopoe—which, alas, seldom shows its lovely crest near English homesteads without falling a prey to some prowler with a gun.

THOMAS POLE.

380. Courage in the Rook.—I once saw a heron get a very *mauvais quart d'heure* in the air, escaping with difficulty and trepidation from the attack of a rook. To-day it was no less formidable a foe than the rough-legged buzzard, which, rising from a mountain combe, was valiantly pursued. As the hawk circled, the rook was invariably the quicker to rise, and it attempted to strike at least a score of times, each "stoop" accompanied by a cry. The fight was carried to a great height in the air, from which the buzzard sailed away to the pines, and the rook descended to its trees in the valley.

In the Cevennes. THOMAS POLE.
June.

381. Can Swifts take Wing from the Ground?—I have not seen the discussion in the Daily Journal mentioned by your correspondent last month, but I can answer the question very satisfactorily from my own experience. When a boy I read in some book the oft-repeated statement that these birds cannot rise from level ground. It happened to be the breeding-season, and I at once wended my way, very much interested in the question, to an old cottage I knew of where many pairs nested in holes in the thatch. I put my hand up one of the holes, captured a swift on its nest, carried it to the hard road close by, and carefully placed it on the ground. The bird at once rose and flew away without any difficulty whatever. I proceeded to try the same experiment on about a dozen other birds, and every one of them flew away, some, however, not quite so easily as others. I conclude, therefore, that the idea that the swift cannot rise from level ground must be a popular error, probably started by some "arm-chair" naturalists, who argued to their own satisfaction that because the bird's wings were very long and its legs extremely short, it would be unable to do so. These gentlemen argued much in the same way about the young cuckoo turning its companions out of the nest in which it had been hatched. They said it was obviously impossible for a newly-hatched bird to possses sufficient strength to perform such a feat, and when some of us told them that facts were against them, they almost called us liars, indeed, practically did so. In the case given by your correspondent there was a special reason, which he himself suggests, why the swift failed to take wing. No wonder it could not do so after receiving a severe mauling from such a powerful bird as a starling.

Chichester. W. S. CLEATHER.

382.—For the last half century this question has been more or less brought to my notice. I have no reason to suppose that in the vigour of health they are unable to rise from a level surface; and under ordinary conditions swifts do not settle on the ground. The letter quoted in No. 364 supplies the reason why on rare occasions swifts have been found unable to rise from the ground. The one spoken of was weak from the "cold weather and want of food," and had also been "hurt by the starling which had been pecking it." When thrown into the air it had sufficient strength left to fly away. It is far greater exertion to a bird to take flight from the ground, than to fly when thrown into the air. I have on several occasions picked up exhausted swallows and martins, which have taken flight when loosed. Swifts suffer severely in a cold spring and are sometimes decimated by a cold snap.

July, 1906. EDMUND THOS. DAUBENY.

383. Woodpeckers' Love-Call.—I look upon the tapping, or "drumming," as Mr. Westell has it, of the greater and lesser spotted woodpeckers as a love-call: and not as a means of procuring food as he supposes. It is to be heard in the spring, when mating goes on, and very rarely if ever at other times. It remains to be proved whether a tapping noise, such as theirs, on the trunk of a tree would cause insects to rush out of the crevices of the bark into open danger, or to cling closer than ever to their lurking places. I am ready to give up these opinions on proof to the contrary being given. A naturalist worth his salt must be prepared to meet many a question with an open mind. I have learned and unlearned a lot since I became a writer in NATURE NOTES.

July, 1906. EDMUND THOS. DAUBENY.

384. An East Anglian Ternery.—Mr. Edmund Thos. Daubeny's note on the resting-place of the terns was particularly welcome, and I was glad to find

that the writer did not reveal the exact spot. I recall a similar nesting-place, a low sandbank on the shores of Lincolnshire, only a short two miles from a popular watering-place. Yet the Lesser Terns take no notice; their eggs are in less danger from a thousand excursionists than from one rabid collector.

WALTER JOHNSON.

385. Pythons.—In a museum which I have lately visited, one of the principal attractions, judging by the attention paid to it, was a glass case containing a full grown tiger in the coils of a huge python, which was crushing it to death. The snake had seized it by the throat, from which blood was flowing copiously. Pythons do not attack such large animals as tigers, and could not swallow them if they did; but confine their attentions to small deer, kids, hares, and the like. The idea of a snake being powerful enough in the jaw to seize a tiger by the throat, and cause the blood to flow, as if the throat were cut, is ridiculous. Absurdities in our museums are not uncommon. Why perpetuate them?

July, 1906. EDMUND THOS. DAUBENY.

386. A "Plague" of Caterpillars.—A so-called "plague" of caterpillars, though in reality the very reverse of a plague, has been going on near here for some days past. I went along half a mile of road covered by them in such numbers as to be unable to avoid crushing them with my bicycle. They are the larvæ of the Cinnabar Moth (*Callimorpha jacobææ*.) Having devoured the plants of ragwort and groundsel on which they were born, they are roaming all over the district. If found by them not one of these noxious weeds will escape destruction. As their numbers are great, and the supply of their food does not equal the demand, these hordes of caterpillars are doomed to starvation. Being conspicuous and gaudy they are protected from the attacks of birds by their nauseous taste.

July, 1906. EDMUND THOS. DAUBENY.

387. Hearing in Insects.—Mr. Avery's query* as to the behaviour of certain caterpillars, opens a much debated question, and it may be of interest both to him and to other readers of NATURE NOTES if I venture a few words upon the subject. It is one upon which a very great deal has been written by a whole legion of authors. As a matter of fact, however, all that can be said upon it is entirely negative. A true sense of hearing is possibly possessed by a few of the Orthoptera. Huber, Perris, Dugès, Avebury, and Forel, have all tried the production of every imaginable sound, but so long as precautions have been taken to avoid the communication to them of mechanical vibrations (to which they are extremely sensitive), the insects experimented upon have appeared absolutely deaf. Avebury used sounds too high to be perceived by the human ear, but no insect reacted to them, and he was forced to agree with the opinions expressed by Huber, Perris and Forel, that hearing cannot be demonstrated in bees, wasps, or ants. Dufour considered that he had demonstrated hearing in crickets and in *Anobium*, because those insects ceased their note when he moved a chair or struck the ground; he apparently forgets that deaf-mutes feel the rolling of a carriage at a distance, although they cannot hear it. The same may be said of the experiment quoted by Avebury in "Ants, Bees and Wasps" (page 226).

In dealing with hearing in the lower animals (especially among invertebrates) it must be remembered that the sense in question is a physical one. All sonorous waves, especially those of low sounds, are much more akin to large mechanical vibrations than luminous, caloric, or electric waves. The origin of hearing, therefore, must be connected with touch. There is, however, a distinct difference between the perception of a very low sound (such, for example, as that of a 1 C 16 tuning fork) by touch and by hearing. It must not be forgotten that the specialisation of hearing has reached a delicacy of detail in man which is not found in the lower vertebrates. It is probably the sense which most separates us from the lower animals. Even in fish the auditory nerve is confused with other nerves, and the cochlea—that part of the labyrinth which has especially to do with hearing—has not yet appeared.

* NATURE NOTES, July, 1906, page 129.

If we sum up the whole of the evidence which has been put forward upon the subject of hearing in insects (it is far too bulky to quote in so small a space), it will be found to amount to practically nothing. Graber, one of the most voluminous and frequently quoted writers in this branch of investigation, contradicts himself more than once. He first stated that the organ of hearing in insects existed in the head, then in the antennæ, then that the sense is disseminated throughout the body.

In conclusion, what may be considered as proof of hearing appears to Dugès and Forel (and from my own small observations, I can only agree with them) to rest, with few exceptions, almost certainly on mechanical vibrations of the air or ground. These are simply perceived as such by the tactile organs of insects, as Dugès says: "A pseudo-audition, consisting in the perception of mechanical vibrations by the whole body." This almost corresponds to the opinion last expressed by Graber as to the "hearing" of *Periplaneta*, and it is probably the explanation of the behaviour of Mr. Avery's caterpillars.

MACLEOD YEARSLEY.

388. "Honeydew." — Enclosed are some leaves of common lime (*Tilia vulgaris*) coated as you may see with "Honey-dew."

It is several years now since such a flow of this secretion took place as we see this year—due more especially to hot and dry summer weather. The leaves, which are entirely glazed over with the sticky liquid, I have gathered from a tree without flowers, neither is there any other tree of its kind, or others with flowers, within a considerable distance to attract insects. For a week I have made daily and nightly observations, with the result that I have found very little signs of Aphides or other insect life to cause so great a flow of nectar. The few I have found appear lifeless, having become transfixed, like flies settling on plants of the sundew, to the sticky fluid. So that I think it impossible for such a few, just here and there, to cause so great an exudation. The tree from which I have made my observations stands in the open, where the direct rays of the hot sun are upon it throughout the day. Last evening, Friday, July 13, I noticed moisture dropping from the tree at 9 o'clock; at 10.30 it was dropping much faster, as though rain was falling from the tree. The leaves I examined were then saturated with "Honey-dew," but with no more consistency than water, but, as soon as touched with the warm hand, it became sticky, like gum. Even the warm room into which I took them caused the thin moisture to harden in a few minutes' time. The amount of moisture which falls from this tree every evening is about a pint and a half to a quart.

I cannot think it possible for insect life to be responsible for such a large exudation. I may say that the leaves I gathered last evening when the nectar was falling contained no insect life of any kind whatever.

P.S.—The couple of sycamore leaves are from a tree growing near.

41, *Heath Street, Hampstead. N.W.* JAMES E. WHITING.

[In inserting a note on this subject we would remind our readers that it was copiously discussed last year, so that only new observations or deductions are desirable. We have ourselves noticed this summer (i.) that the drip takes place from poplar (*Populus monilifera*), though less copiously than from linden; (ii.) that it is more copious from lindens having a southerly or sunny aspect than from others; (iii.) that it occurs equally from flowering specimens, and from young trees or pollards which do not flower; (iv.) that the glaze occurs on the upper surface of the uppermost leaves of trees not overhung by others, and on the upper surface of leaves on long sprays projecting beyond the rest of the tree.—ED. *N.N.*]

389. Plants on the Chalk.—I came upon a remarkable sight yesterday on the marly slopes of the chalk hills above Buckland village—to wit, a colony of Viper's Bugloss, the plants of which varied from two to three feet in height. The prevailing colour was the usual intense blue, but some of the plants were *pure* white, and others of a paler blue. I should think that a quarter of an acre of ground must have been covered by these giants, and the effect was very fine. I noticed in the same field, *Ophrys apifera*, *Ajuga Chamæpitys*, *Carduus nutans* (a very handsome thistle), *Polygonum Fagopyrum* (abundant, thanks no doubt to the pheasant breeder), and *Malva moschata*. The last named was not frequent,

but was more luxuriant in growth and size of flowers than in the district where I have found it most abundant, viz., on the Cambrian formation in South Shropshire.

Walton-on-the-Hill, M. J. TEESDALE.
June 25, 1906.

390. Geotropic Hyacinth.—The instance described by Mr. Dowell in the July number of NATURE NOTES is not, I find, unique, and suggests the desirability of further and more precise experiment. Most seeds and bulbs exhibit considerable geotropic force in righting themselves when planted upside down. A series of hyacinth bulbs planted with their shoots inclined downwards at varying angles, and those of some other species for comparison, might afford interesting results as to specific geotropic force.—ED. *N.N.*

391. The Chislehurst "Caves."—Will the recorder of the Selbornian outing to Chislehurst (p. 139) kindly pardon a correction or two? I have visited the "Caves"—a question-begging name, indeed—many times. At first they were three miles in extent; they gradually extended to seven miles, now I see that the enthusiastic guide makes it fifteen miles. Making allowance for galleries, whose ends are not to be reached because of puddles of water, your readers may be sure that the passages do not extend a mile in any direction. Two or three years ago Mr. W. T. Maxton, of Richmond, and myself, hired a guide and spent a whole day in making a rough plan of the excavations. Since then, Messrs. R. H. and T. E. Forster have accurately surveyed the galleries, and their labours were recorded before the British Archæological Association in 1904. (See *Journal of Br. Arch. Assoc.*, 1904, new series X., pp. 64-74; 87-102). The subject is too technical, perhaps, for NATURE NOTES, but both sides of the matter may be read at the reference given.

The fossil *Ichthyosaurus* is simply an abnormally long flint—alas, that guides will take advantage of one's casual glimpse and the poor light in the galleries. I have ransacked all the papers obtainable on this subject, and am bound to say that I think the passages were originally excavations for chalk simply, though they doubtless had several secondary uses. I trust the writer will excuse this note.

Battersea, July 14. WALTER JOHNSON, F.G.S.

NATURAL HISTORY QUERIES.

83. Frogs and Toads.—Do these animals eat strawberries? Many persons, including gardeners, maintain they do. As a rule they prey on animate and not on inanimate objects. No experiments of mine have proved them guilty.

July, 1906. EDMUND THOS. DAUBENY.

84. Caterpillars and Music.—Mr. Avery's query in NATURE NOTES for July suggests another question besides that of the caterpillar's appreciation of music. The *Vanessas* mentioned feed generally upon nettles—true nettles (*Urtica*) that is—but Mr. Avery speaks of using "white nettle," presumably the "dead nettle" (*Lamium album*). Did the insects thrive on this, or were they misled by the resemblance between the two leaves? IGNORAMUS.

85. A Genius.—It is said that early associations have much to do with our love and preference for certain flowers. While this is undoubtedly true, there are many instances where—like love 'twixt ourselves—closer acquaintance and better knowledge have their effect. I cannot recall, for instance, ever having, in my youth, taken particular interest in the "Nasturtium," and yet I welcome this—perhaps the commonest of our garden flowers—more and more every year. The *Tropæolum* is surely a very genius amongst plants, and in its evolution appears to have departed from the beaten track. Note how by some peculiar knack of arrangement, aided by the web-like veinings, the comparatively shapeless leaves become the perfection of grace and artistic effect; observe the charm in the pose and outline of the flowers, and also their sun-light colouring, produced, I think, partly by the marvellous splashes and pencillings on the petals! Then turn to the climbing variety: nature has endowed it with none of the usual climbing attributes—tendrils, hooks, thorns, spirals, are all absent, yet it is no

mean climber, supporting itself by a bend of the stem here and a twist of the leaf-stalk there. I would like to learn something of the history of this flower. How did it come to be so generally misnamed "Nasturtium"; where is its native country, and when was it first introduced into England?

[The Tropæolums are natives of the dry regions of South and Central America, being in many points of structure typically "xerophytic." They seem first to have been sent from Peru to Spain previous to the year 1565, to Nicolas Monardes, who described the plant in his "De las cosas qui se traen de las Indias Occidentales qui sirven al uso de medecina" (Seville, 1565). This work was translated by an English merchant, John Frampton, as "Joyful News out of the New Founde World" (1577), and into Latin in Clusins's "Exoticorum libri decem" (Antwerp, 1605). Monardes calls it "Flos sanguineus," "Mastuerço de las Indias," probably by a misprint for "Nasturcio," and "Nasturcium peruanum." Gerard in his "Herball" (1597) writes—"Of Indian Cresses. The seedes of this rare and faire plant came first from the Indies into Spaine, and thence into France and Flanders, from whence I received seede . . from my loving friend John Robin of Paris." He gives a tolerable figure of the plant and its blossoms. Parkinson in his "Paradisus" (1629) calls it "Nasturtium Indicum, Indian Cresses, or yellow Larkes' heeles," and adds "It is now very familiar in most Gardens of any curiosity. . . The Spaniards and others use the leaves hereof in stead of ordinary Cresses." He quotes the Spanish name as "Mastnerzo de las Indias, which is Nasturtium Indicum." Nasturtium was the Classical name for some pungent salad-plants, and was used from the time of Dioscorides for Cresses. In the sixteenth century plants were classed together rather by properties than by floral structure; and the Cabbage White Butterfly recognises a kinship in food-value between the *Tropæolum* and the *Cruciferæ*. Linnæus restricted the Classical name *Nasturtium* to the Old World Watercresses, now known as *Radicula*, and coined the appropriate *Tropæolum*, or Little Trophy-flower, for the American group, "from the shield-like leaves and the brilliant flowers, shaped like golden helmets, pierced through and through, and stained with blood" (Sir J. E. Smith).—Ed. *N.N.*]

86. "Gabriel's Hounds."—In a small and isolated hamlet, a few miles from Matlock, several weeks ago, was heard after dark in the evening, cries as if of a pack of hounds in full cry. People came out of their houses to see what was the matter, and then someone with more knowledge than the rest stated that the cries were uttered by "Gabriel's Hounds." I have since been asked what was the real origin, and in reply I could only surmise that a flock of birds flying overhead might have been the cause. Can any of your readers give me an explanation? I may add that these cries are regarded by country folk as an ill-omen.

Matlock, July 5, 1906. ROBERT HALL.

87. Reference Wanted.—Can you or any reader of NATURE NOTES refer me to the volume (?) containing the Essay by Mr. W. R. Greg "On the Special Beauty of Ruin and Decay," mentioned by our President in his address (NATURE NOTES, June, 1906, p. 104).

Greenhill, Evesham. EDMUND H. NEW.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

New Members.—*Central Society.*—The following members were elected at the last meeting of the Council: John Acutt, Esq.; John Allen, Esq.; Miss Phyllis Eden; John Selkirk, Esq.; Henry Williams, Esq.

Hampstead Branch—Miss J. A. Thompson.

Subscriptions.—The Council has pleasure in acknowledging a subscription of greater value than 5s. from the following member: E. C. Goulton, Esq., 10s.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m. on the evenings of August 20 and September 17, for the purpose of issuing books to members.

EXCURSIONS.

Saturday, June 16.—Owing to rather showery weather only fourteen members assembled at Cobham Station to visit Stoke d'Abernon Church and the Manor House, by kind permission of Mr. and Mrs. Phillips.

On arrival at the church Mr. Philip M. Johnston read a most interesting and able paper on the architectural and historic features of the building, from which paper we are permitted to give a few extracts. The church is dedicated to St. Mary the Virgin, whose emblem, the rose, appears on the vault-boss of the chancel. The church, prior to 1866, consisted of a nave, north aisle and chancel, with the Norbury Chantry on the north. It then possessed a short wooden bell-turret and spire at the west end. The works of 1866 involved the removal of this and a substitution of a miniature bell-tower at the N.W. angle, the lengthening of the nave and aisle, the rebuilding of the chancel arch on different lines and the making of a new east window. These were carried out at the cost of the late Canon Phillips; but much of the work done was detrimental to the archæological interest of the church. The plan of the Saxon church can be clearly traced, and large parts of the walls of that period (circ. 900 to 1000 A.D.) remain, including a piece of herring-bone work in Roman bricks, a sun-dial and a door to the original Priest's Chamber, high up in the south wall of the nave. The height and thinness of the Saxon walls—both early characteristics—are noteworthy. The chancel has a very marked inclination to the north—a peculiarity shared with Fetcham Church higher up the River Mole, the dimensions of which also correspond very closely with those of Stoke d'Abernon. The north aisle dates from about 1190, and there are the remains of a painted Crucifixion (coeval) on the eastern face. The chancel was remodelled in the beginning of the Early English period (circ. 1210), when the beautiful stone and chalk vaulting and the graceful lancet remaining in the south wall were inserted. There are considerable remains of contemporary wall-painting, including part of a "Majesty," or the "Worship in Heaven as seen in the Apocalypse." Sir John Norbury, in the close of the fifteenth century, built himself a handsome Chantry Chapel on the north of the chancel, with a fine tomb, subsequently wrecked by the Reformers, and a fireplace.

The church chest is a very noteworthy feature, and may be dated with certainty at about 1230. It is one of the most perfect of a group of such chests dating from the first half of the thirteenth century, and all distinguished by such marks as the "pin-hinge" and roundels of shallow geometrical patterns carved upon the front. The seven-sided pulpit, very richly carved in cedar, is another and was doubtless made to the order of a member of that family early in the seventeenth century. The grotesque caryatides that act as brackets to the pulpit stem, the richly inlaid sounding-board (now dismounted) and the contemporary iron hour-glass bracket are all worthy of note.

In the chancel are the famous brasses of the d'Abernons: that of the elder Sir John being the oldest remaining of this class of memorial in England. He died in 1277, his son in 1327, and both are admirable examples of the armed knight at those dates. They are very fine specimens of engraving, and the earlier one still retains portions of the original blue enamel that formed the field of the shield. Among other memorials are brasses of a chrysom child, Dame Anne Norbury exceptionally fine piece of ancient woodwork. It bears the arms of the Vincents, and her children, a coffin-slab to "Richard the Little," parson of Stoke in the early part of the thirteenth century, and a fine series of late sixteenth and early seventeenth century monuments to the Vincent family and others in the Norbury Chantry.

Aftea tea Mrs. Phillips, the Lady of the Manor, most kindly conducted the party over the Manor House, where are to be seen many fine pieces of half-timbering. The house is a veritable museum of old furniture both British and foreign, and the collection of pictures includes a very fine series of the works of George Morland, some forty in number.

After passing a very hearty vote of thanks to Mr. and Mrs. Phillips for their kindness and courtesy, the party started to walk to Oxshott. Our thanks for this excursion are due to Mr. Wilfred Mark Webb, who secured the necessary permissions, and to Mr. Philip M. Johnston, of the Surrey Archæological Society, for his guidance at the church.

Saturday, June 23.—Under the leadership of Mr. S. Willson, a party of twenty-eight visited Wimbledon. The parish church, although almost entirely rebuilt in 1843, still contains interesting relics dating from about 1400, notably the Mortuary Chapel with the tomb of the Cecils, fragments of armour and fine old stained glass. After inspecting these, the party was entertained by Mr. and Mrs. Willson at the Old Rectory House, tea being enjoyed on the lawn. A paper upon the old house was read by Mr. Willson, showing the date of the original portion to be about 1500, and that it is reputed to have been the residence of the great Lord Burleigh. The house, which contains many relics of the past, was explored; and after rambling through the grounds, the party started on a walk through the old village across the Common to Cæsar's Camp and Well, thence through a delightful wood, teeming with bird and plant life, to Queen's Mere and the Windmill, old houses and objects of interest being pointed out on the way. Unfortunately the evening was dull and misty, which somewhat spoiled the glorious views from this part of the Common, including the sunset across Queen's Mere.

Saturday, June 30.—In perfect weather a party of Selbornians went to Romford and walked thence through one of the prettiest parts of Essex to Havering-atte-Bower, the way leading along a lane with trees meeting overhead and affording a welcome shade, up the stiff hill that is a standing protest against the popularly held opinion as to the flatness of the county. At the top of this hill representatives of the Lady of the Manor—Mrs. McIntosh—conducted the members over the delightful grounds and conservatories of Havering Park, which is built upon the spot where stood the Bower or Palace of the ancient kings of England. The first monarch recorded as residing here was Edward the Confessor and the last was Charles I. The view from the grounds, including five counties and giving a glimpse of the Thames, was much admired. A visit was next paid to the pretty little modern church, where the Vicar had kindly thrown open the registers for inspection: the earliest entry in these is of the date 1679, the registers antecedent to this date having been transferred to Hornchurch. An old font also attracted interest. After viewing the well-preserved stocks and whipping-post on the village green, shaded by a curiously bricked-up elm which is certainly over six hundred years old, tea was taken, after which Mr. A. B. Hornblower read a short paper giving a brief *résumé* of the history of the place and discussing the origin of the name.

A detour brought into view Pyrgo Hall, the seat of Lord O'Hagan, by whose permission a visit was paid to the well-defined site of the Queen's Palace or Dower in the Park, the shelter of most if not all our queens from 1027 to 1649.

Saturday, July 7.—On this day Dr. Henry Willson once again led a party of Selbornians on one of his enjoyable rambles round Weybridge. The route followed led across the Common and along a pleasant road to the foot of St. George's Hill. Thence under the welcome shade of the magnificent pines, the party slowly wended its way upward, frequently stooping to watch the activities of the ants, which swarmed everywhere, foraging for food, and triumphantly bearing back to their nests their prey, which here seemed to consist chiefly of moths and the smaller beetles. Arriving at the summit a long pause was made to admire the fine views of the Thames Valley, which unfold themselves from this vantage point. After tea the party proceeded to Fox Warren, through Mrs. Buxton's picturesque estate, on the way narrowly escaping from a hooligan on a motor car dashing recklessly round a bend in the road. A little further on another fine view was enjoyed of a wide stretch of well-wooded country watered by the River Wey. The homeward route lay for the most part through leafy lanes and broad meadows fragrant with honeysuckle and meadowsweet, while the songs of the birds were a striking feature of this portion of the walk. This is certainly a ramble well worthy of repetition on some future occasion.

NEWS FROM THE BRANCHES.

Birmingham and Midland Branch.—A botanical excursion was arranged for Saturday, June 23, when a party of members and friends went by train to Kidderminster and thence to Hornport. Mr. John Humphries kindly acted as guide, pointing out many interesting plants growing in the locality, and a very pleasant afternoon was spent.

FORTHCOMING EVENTS.

COUNCIL AND COMMITTEE MEETINGS.

Monday, August 20.—Publications Committee, at 5.30 p.m.

Tuesday, September 25.—Council Meeting, at 5.30 p.m.

EXCURSIONS.

Saturday, August 4.—No ramble, on account of the August Bank Holiday.

Saturday, August 11.—Downe *via* Hayes and Keston Commons and Holwood Park. Train leaves Charing Cross at 2.8 p.m., Cannon Street 2.23 p.m. and London Bridge (S.E. Railway) at 2.26 p.m. *Passengers from Charing Cross change at London Bridge.* Meet at Hayes Station at 3.17 p.m. Take return tickets to Hayes, 1s. 10d. Guide, Mr. B. T. Lowne.

Saturday, August 18.—Bricket Wood, Aldenham and Munden. Train leaves Euston at 1.45 p.m. Return tickets to Bricket Wood, 2s. 7d. It is hoped that arrangements may be made for the party to visit Munden House and Gardens (the seat of the Hon. A. Holland-Hibbert) or Aldenham Abbey (the seat of Mr. Pierpont Morgan, junr.). Tea at "The Chequers," Aldenham. Return train 9.13 p.m., reaching Willesden at 9.57, Euston 10.20. Guide, Mr. W. Percival Westell, F.R.H.S., M.B.O.U.

Saturday, August 25.—The Gardens of the Royal Horticultural Society at Wisley. Trains leave Waterloo (Main Line) at 2.28 p.m. and Clapham Junction at 2.27. *Passengers from Clapham Junction change at Surbiton.* Take return tickets to Byfleet, 3s. 3d. Tea at the "Hut" Hotel. Mr. S. T. Wright, the Superintendent, will kindly receive the party. If a sufficient number write to the Excursions' Secretary before August 21, a reduced fare of 2s. 2d. will be arranged from Waterloo. Walking distance about six miles.

Saturday, September 1.—Epsom and Walton Heath. Meet at Tattenham Corner at 2.36 p.m. Trains leave Charing Cross 1.25, Cannon Street 1.36 and London Bridge (S.E. Railway) at 1.51. *Passengers from Charing Cross and Cannon Street change at London Bridge.* Take cheap return tickets to Tattenham Corner 1s. 6d. Return train at 7.32, but if a sufficient number write to the Excursions' Secretary before August 28 the cheap tickets will be made available for return from Tadworth at 9.5 p.m. Guide, Miss Giberne.

Saturday, September 8.—Epping Forest. Meet at Chingford Station at 3 p.m. Trains from Liverpool Street 2.8 and 2.23 p.m. Fare 1s. return. Walk to High Beach *via* Fairmead, returning *via* Sewardstone Green and Bury Wood. Tea at "Duke of Wellington" at 5.30. Guide, Mr. C. Nicholson.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Hon. Secretary of the Excursions Committee,* at 16, Heathcote Street, W.C.

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1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 201. SEPTEMBER, 1906. Vol. XVII.

SHAKESPEARE'S TREATMENT OF NATURE COMPARED WITH THAT OF MODERN POETS.

FROM the earliest dawn of man's reason, Nature, perforce, demanded a large share of his attention. Natural phenomena are the basis of nearly all old religions and mythologies. But at this period of human development Nature is not studied for her own sake, and there is no love of her at all. Natural objects are either the vehicle or dwelling place of a god, as in the fetich, or the temporary abiding place of a spiritual existence, as in the totem; or certain objects are in some way or another sacred to various deities or possessed of mystical power or symbolical of divine life. All powers and forces of Nature are directly and separately controlled by superhuman intelligences, and they are feared accordingly, not studied or correlated. Even in ages long past, the earliest of which we have records, the Divine Will is thought to be learned from insignificant natural events; and in more than a metaphorical sense the thunder is considered as the voice of God. Such a theocratic treatment of Nature has, of course, long ceased to be possible, but the same fundamental tendency of man's mind, though developed and changed, may still be traced in the philosophical and subjective treatment of her by our modern poets. This, and the æsthetical treatment, are what chiefly attract our attention in their manner of writing of her. Let us take the latter first. Mankind in general—to whose feelings poets give expression—now loves Nature for her own sake. We take a sensuous delight in her sights, her sounds, her smells; and more than that, we are conscious of our love for her. We analyse it, we criticise it, we take pleasure in the knowledge that we love her. All our modern poets who deal with Nature at all, and they do it much more generally than earlier ones, exemplify this. Wordsworth's "Lines above Tintern Abbey":—

> The sounding cataract
> Haunted me like a passion: the tall rock,
> The mountain and the deep and gloomy wood,
> Their colours and their forms were then to me
> An appetite; a feeling and a love
> That had no need of a remoter charm
> By thought supplied, or any interest
> Unborrowed from the eye,

may be taken as a typical expression of this spirit. But such a treatment is quite absent from Shakespeare. Not that he does not know and love Nature well, he does both, but he never pauses to reflect on his feeling for her. He loves her as a healthy child loves its friends and its sports, enjoys her as such a child does its food, unconsciously, and as a matter of course. In his position as regards Nature he stands midway between the ancients and ourselves. Nature is not so near him, does not dominate his life, as she did and does with those to whom stones and trees and animals are the dwelling places or incarnations of spirits able to work him weal or woe. But he is nearer to her, and hence less critical of her and of her effect on him than we are, who, with all our enriched love of her, are doomed in a sense to be ever aloof from her, "exiled" from her in a greater or less degree "in our cold homes of art and thought." This æsthetical appreciation of Nature has developed rapidly in modern times, and that Shakespeare is without it is more a characteristic of his age than of himself. The other respect, however, in which his treatment of her differs from that of most modern poets bears in a great degree the stamp of his peculiar genius.

Modern poets, as we have said, since they cannot treat Nature theocratically, treat her philosophically and subjectively. They interpret her, they read into her and see in her the reflection of their own thoughts and theories, and they do this according to the bent of their own mind, religiously, morally, or mystically. Take first the purely religious. We find this abundantly expressed in Keble, in George Herbert, in Cowper, and again, very typically and beautifully in Smart's "Song of David," with its concluding lines:—

> All Nature without voice or sound
> Replied, "O Lord Thou art."

In reading Tennyson we feel ourselves in a religio-philosophical atmosphere. He clearly sees the difficulties, the contradictions presented by Nature; but in spite of all he believes that cosmos will come out of chaos, harmony from discord, that sooner or late "there must be answer to our doubt." The chief note in Matthew Arnold's interpretation of her is like his definition of religion, "morality tinged with emotion." Of this we have a very good example in his poem "Independence." Shelley has equal sentiment but less morality and some mysticism. Wordsworth, who was the first modern poet to make us "feel" Nature and to express in language unsurpassed the purest and

simplest æsthetic appreciation of her, and who was able in a unique manner to "put by the cloud of mortal destiny" when he spoke of her, is yet full of the subjective treatment of her. It is hard to find a word to express the especial character of his manner of interpreting her, but perhaps it is more moral than either religious or mystical, and yet, in a sense, it is both of these. He tells us that he has found in her—

> A presence that disturbs me with the joy
> Of elevated thoughts . . . .
> Whose dwelling is the light of setting suns,
> . . . . that impels
> All thinking things, all objects of all thoughts,
> And rolls through all things.

That he recognises in her—

> The anchor of my purest thoughts, the nurse,
> The guide, the guardian of my heart and soul,
> Of all my moral being ;

and that to a mind in harmony with her she will teach more "than all the sages can." Byron alone of modern poets who wrote much on this subject can hardly be said to have a philosophy of Nature. Not that his descriptions of her are not coloured by his own character ; this, of course, they are. His love and admiration for her are deepened in their intensity by his misanthropy ; they reflect the passion and energy of his nature : the mountains, waves, and skies are a part of him and of his soul ; he would be a sharer in the fierce and far delight of the tempest ; he would condemn all objects if compared with these ; but they do not speak to him of anything beyond. They have no moral meaning for him, still less a religious one, nor do we find traces of a mystical interpretation unless it be in such a rare passage as—

> All is concenter'd and in a life intense
> Where not a beam, nor air, nor leaf is lost,
> But hath a part of being and a sense
> Of that which is of all Creator and defense.

Now in this respect Shakespeare more nearly resembles him than any of the other poets we have mentioned. We must emphasise the words "in this respect," for it is in this only. Shakespeare's love of Nature was not a passion, and could never have been expressed in words aglow with such a heat as Byron's is ; and the sweetness of his disposition would never have allowed him to extol Nature at the expense of humanity. But he does not interpret her ; she has for him no religious, or moral, or mystical meaning. He represents impartially every side of her, the blue-veined violets, the luscious woodbine, the gracious light, proud-pied April, old December's bareness, the spotted snakes, the thorny hedgehogs, the wrathful skies, the sheets of fire, the burst of horrid lightning ; but he does not give prominence to one side of her more than to another, does

not seek to harmonise one with another, nor to find in Nature the expression of a preconceived theory or philosophy; and this is very characteristic of the man. It would be hard to say that Shakespeare had any definite philosophy of life; he was too cosmopolitan, too many-sided. For the most part it is only those—by far the greater number of men—who have some dominant tone of mind that are able to form philosophies and theories, to see all sides but one—if they see more than one at all—in such a light that they can subordinate them to that one. Shakespeare would seem to have seen all in an equal light, but—and herein lies his peculiar greatness in which Byron, to whom we likened him, has no share—seeing all to have kept his mind wholesome, well-balanced, sane, not fearing to give just expression to each in its time and season in spite of all apparent contradictions, and not seeking with any premature synthesis to explain "this unintelligible world."

J. M. K.

A FORETELLING.

THE following case of "foretelling" is possibly only a coincidence; but, if so, the occurrence is certainly both curious and beautiful. Last spring a pair of house-martins built a nest under the eaves of an out-building in our sunny yard. The villagers expressed surprise that the swallows should build on any part of our pretty new-old home, where they had never been known to build before. We were new tenants ourselves, and we ascribed the honour conferred on "Cherry Barton" to our custom of placing much water about the garden in stone basins or shallow troughs for thirsty birds throughout the summer.

Whatever the cause, the swallows came, inspected the site, and after a great deal of twittering, and clinging to the sunny wall, the wonderful clay construction was completed, and the nest and its inhabitants were amongst our dearest summer possessions. As soon as the autumn winds swept the leaves from the trees, and the swallows to sunnier climes, we carefully fitted a white wooden box over the precious nest that no harm might come to it before the return of the birds the following spring.

In this somewhat out of the way Kentish village, all signs of spring come to us quite a fortnight later than they appear to some of the places in our neighbourhood; and it was this law of Nature, added to the unusually backward spring we are passing through, which kept us from uncovering our swallow's nest, though we felt we must be on the look-out, once April gave place to May. But there was no word of returning swallows, and no sign of them, and, to me, spring seemed to lack her best credentials because they came not.

And now for my story: On the night of May 3 I dreamt that

the swallows returned while I was standing in the yard among the seed frames and tubs of bright flowers, and that one of the birds clung to the wall sheltering the nest, the other clinging to the wall opposite, which is the wall of the house. I have no recollection as to whether in my dream the nest was covered or uncovered; but something distressed me, and the birds appeared to be clinging in a patient, expectant way.

On awaking I forgot about the dream; but in the course of the morning I described it to my husband, who immediately removed the wooden box from the nest. And that very evening, towards sunset, the swallows swept into the yard, with shrill and joyous twitter, and a glint of blue wings, the old birds straight to the nest, as if they had never been away, and a pair of younger birds to perch (as I saw them in my dream), the one on the nest wall, the other on the wall of the house.

I should only like to add that earlier in the afternoon we strolled to the end of the village, where there is a row of cottages which would be commonplace but for the fact that there are no less than forty-three swallows' nests under the eaves. "Let us go and see if 'the street' swallows have returned," I said to my husband. But all was silent and deserted; indeed, some of the nests had been so roughly handled by the sparrows that we feared there would be sorrow and indignation on the part of the owners when they returned. All the more were we able to rejoice that our own dear pair, when they came back to us, could fly "straight home." And in the depths of their cosy mud-cup nest they remained for nearly half-an-hour, chattering and twittering, no doubt telling each other how glad they were to find the front door wide open, and none of their household gods disarranged.

But what might not have happened if I had not dreamed that dream? Would the swallows' instinct have told them that the plain wooden box was sheltering their carefully made nest? And if so, would the shock of finding no nest have been lessened by the knowledge that the covering was kindly meant on our part? I cannot tell, and I do not think it matters, because all is well, and we look forward to a second nest this spring.

RACHEL.

SELBORNIANA.

WILD BIRD PROTECTION. — We have received from the Home Office an Order dated May 11, referring to the City of Nottingham and protecting certain species of birds, including the Avocet, Bittern, Bullfinch, Buntings, Buzzards, Chaffinch, Goldfinch, Kingfisher, Linnet, Nightingale, Oriole, Owls, Warblers, Woodpeckers, &c., all the year round.

WILD PLANT PROTECTION.—A correspondent, who remembers when a boy the *Osmunda* and the true Maidenhair, both in St. Ives' Bay and at Mousehole, sends us the following extract

from the *Daily News* of August 16, with reference to the depredations on the rarer Cornish ferns. We only hope the County Council will not meet with opposition to their bye-law on the part of the Home Office:—

"Cornwall, as most tourists in the West know, boasts of numerous beautiful ferns, which are almost, if not entirely, peculiar to the county, but for some years past these lovely growths have suffered at the hands of persons who have uprooted them. The ferns have been sent, I believe, in large quantities to London and other large centres, where they are advertised and sold. In order to put a stop to this wholesale deprivation of the Cornish hedges of their beauty, the County Council have just passed a bye-law prohibiting any person to uproot or destroy any ferns growing in public places, under a penalty of £5. The bye-law, however, will not apply to persons collecting specimens in small quantities for private or scientific use."

Birds'-nesting.—A new member of the Society writes for our opinion, or that of the Society in general, on birds'-nesting, saying that the only boys in his district (Windermere) who are interested in Natural History are those who are keen egg-collectors, seeking specially for rarities and not always keeping to the rule of taking one egg only. Our correspondent suggests a discussion in our pages, to which we have no objection; but we may, perhaps, advantageously make a few preliminary remarks. The Selborne Society has no rule against the collection of eggs for purposes of study; but would certainly deprecate the needless multiplication of private collections even for this purpose. The Society cannot, of course, countenance any infringement of the law of the land, which now happily secures almost all necessary protection to species in any danger of extermination. The spirit of the teaching of the Society is that much valuable knowledge of birds' nests, eggs and life-history, can be obtained without collecting. There are, we believe, authorities who think that some birds are more likely to desert their nests when one egg is taken than if the entire "clutch" is removed; and there are certainly some important biometrical questions which can only be settled by a detailed study of complete clutches.

"Nature Notes" in School.—A village schoolmaster wrote in May last: "We had quite a happy morning in school this morning. I read to all the children 'May,' 'Instinct *v.* Reason' and "Natural History Notes,' the result being that when we came to the Conversational Lesson we had quite a good number of interesting stories of the children's own observations." We are very pleased to hear so satisfactory an instance of the elasticity of the present time-table and hope our pages may be similarly utilised on many occasions and in many places.

The National Trust.—With the publication of its Eleventh Annual Report it becomes apparent that the Council of the National Trust for Places of Historic Interest or Natural Beauty recognise the true proportions of the work before them and that they are securing the trust of the nation. Owning twenty-four

properties, totalling nearly 1,700 acres, it now sees that it requires statutory powers of preserving order, which as a mere Limited Company it does not possess, and a permanent general fund far exceeding the present £400. Having secured and paid for Gowbarrow and obtained the option of purchasing two other valuable properties on Derwentwater, one of the most pressing demands which the Trust has now to make upon the purses of its supporters is for £1,000 for the necessary repairs of Barrington Court, the shell of a glorious Tudor mansion which has been practically given to the Trust, *i.e.*, to the nation.

Commons and Footpaths Preservation Society.—We have spoken recently of the excellent results of this Society's work, especially in connection with the Nettlebed Commons and Hindhead. We notice from their recently issued Report that £750 is needed before March, 1907, to secure Purley Beeches; but some £850 is also most urgently required to relieve the guarantors, whose prompt and public-spirited action obtained Hindhead as a permanent open space.

NATURAL HISTORY NOTES.

392. The Truth in De Rougemont's Stories.—Mr. Chisholm, a close observer of Nature, who lives near Townsville in North Queensland, writes as follows to a correspondent :—

"We read De Rougemont's story of the Bottle-tree (*Sterculia rupestris*). No doubt you have often seen these trees. About here, northwards, in stony country, they grow fairly large, say to 3 ft. diameter in the centre, enlarged from 2 ft. at the ground and diminishing to a foot at the top, and perhaps 16 to 20 ft. high. (It belongs to the same tribe as "currajong.") The trunk is clear of branches. In some of the scrub of the Dawson and Belzando the blacks scoop out the pulp, and use the boat-shaped tree trunk as a canoe, and it makes a good one—I mean the half of the trunk. The pulpy substance in the trunk resembles tapioca, and after periods of heavy wet contains much water, and I dare say tears of water would run from a chop into the trunk ; at any rate by sucking and chewing the pulp a famishing man could support life for a while ; so the story is not all romance, except that I have to add that men do not usually perish for want of water in a country where the bottle-tree grows, for it does not thrive in rainless districts.

"Another story of De Rougemont's that made some amusement is the one of riding the turtles. It is not all romance. As a boy I used to go to an island on the coast here, in a cutter with a kinsman. The place was uninhabited and a breeding pond for turtle. Large ones often came out on the sand, and remained as if asleep. It used to be good play for a boy to creep up and jump on to the turtle, and ride to the water, for it at once ran there. More often I fell off on the way, and, if not, at once quitted in the surf.

" De Rougemont's other story of the flying wombats, of course, made readers incredulous. The wombat is a big mole, the size of a spaniel, lives underground, and is rare in all places except cold mountainous heights, among bracken. Somehow he seemed to get the flying fox bat confounded with the wombat."

393. Gabriel's Hounds.—Dr. Wright, in his great English Dialect Dictionary says: "This is a name given to a peculiar sound, probably occasioned by flocks of wild geese or fowl, but popularly assigned to a spectral

pack." The sound is sometimes called Gabriel Ratchet, or Gabble Ratchet, and is considered in many parts of the North of England as a sign of ill-omen. Mr. Hall should read Wordsworth's sonnet (Miscellaneous Sonnets, Series II.) headed—

—"gives to airy nothing a local habitation and a name,"

in which there is an interesting allusion to Gabriel's Hounds.

51, *Gloucester Terrace, Hyde Park, W.*, A. HOLTE MACPHERSON.
August 3, 1906.

394. Woodpeckers' Love Call.—I think we must look for something else to account for the tapping of the Woodpecker than their love call, or the frightening of insects. I had a Greater Spotted Woodpecker last year from the nest and it tapped from the first, and has continued all along, more or less. As to insects, it has not got one by its tapping, what few it has had having been taken from my fingers. Certainly it has tapped my hand a time or two. We must look at the way it has to take its food. It cannot hold it with its foot: its bill is not made to crush it, and it has to be taken above ground. So it is continually making pockets, in which its food can be placed to be broken up without falling to the ground. I am about to make a new cage and will note the tapping and the making of pockets, &c.

114, *Upland Road, East Dulwich.* JOHN ACUTT.

395. Robins.—Robins are astir more hours out of the twenty-four than any birds with which I am acquainted. Their voices may be heard directly it begins to get light on a midsummer's morning; and they continue to be on the move long after other birds have retired to rest, as late as 9.30 or 10 p.m.

August, 1906. EDMUND THOS. DAUBENY.

396. Thrushes.—Few birds are so put upon by other birds as thrushes. They allow themselves to be robbed of their food by almost any bird that takes the trouble to steal it from them. If they unearth a worm, the nearest blackbird or starling rushes up and eats it. Sparrows may frequently be seen taking almost out of its mouth, the chafer or some such beetle the thrush has dug out of the ground; and the stupid bird has not the sense to resent the robbery. A starling here preys upon a thrush's weakness in quite an unusual manner. Wherever the thrush goes the starling follows: when it finds a worm or other food, it is immediately robbed. This robbery is so barefaced that, but for my intervention, members of my household would take the starling's life.

August, 1906. EDMUND THOS. DAUBENY.

397. Needless Slaughter.—An incident which occurred within the past week at the small village of Brompton Ralph, near Dulverton, goes to show that snakes are by no means uncommon yet in Somerset. A snake having been seen near a stump of an old tree in a meadow, some haymakers close by set to work with pickaxes, and soon unearthed a regular hot-bed of the reptiles. In all about ten snakes, most of which were over forty inches long, seven slow-worms, and about 150 eggs were destroyed.

398. Peacock Butterflies.—In the autumn these butterflies may be heard uttering a faint clicking noise. How it is produced is quite beyond me; and it occurs when several are together sporting in the sunshine from flower to flower. I have not noticed it in the spring; and conclude it to be a sound emitted in play unconnected with sex or love. These insects settle their matrimonial arrangements after hibernation in the spring.

Southacre, Swaffham, EDMUND THOS. DAUBENY.
August, 1906.

399. Caterpillars and Nettles.—May I take this opportunity of thanking your correspondent, who wishes to be called "Ignoramus," for pointing out my grievous error, or rather slip? "White Nettle" should read Nettle, viz., the real nettle. I have since tried his often repeated experiment and have found the anticipated result of failure. Even larvæ, which have not been fed for three days, will not eat it.

Broxbourne, Herts. W. E. AVERY.

400. Insects and Floral Imitations.—In Knuth's Handbook of Flower Pollination, just published, there occurs the following observation: "Though artificial flowers may seem very realistic to human eyes, yet insects are not to be deceived, for the surface of such flowers appears quite different on close inspection from that of natural ones" (p. 206). I watched a white butterfly, which had somehow reached High Holborn. It fluttered for some time in front of a window of a china shop. There was a large vase with flowers painted upon it, in front of which the butterfly kept hovering. It alighted on the pane, but finding it an obstruction it flew away.

G. Henslow.

401. Hearing of Insects.—In No. 387, Mr. Yearsley rightly observes that the subject of the hearing of vertebrate and invertebrate animals is one that has occupied the pens of a "legion of authors." Writers on these matters too often lose sight of a tendency in the lower animals to take no notice, as far as their outward actions are concerned, of many sounds brought to bear upon them by experimentalists; and, because of this indifference conclude that incapability of hearing is the cause. It seems to me, that generally speaking, animate creation, from man downward, is more or less alert to certain sounds; and so indifferent to others as to take little or no notice of them. Let me illustrate my meaning. A naturalist asks a town-bred musician to stay with him in the country, and takes him out for a walk. In relating their experiences in the evening the friend says he recognised a sonata rather badly played in one of the houses they had passed; and judging by their twitter thought there must be lots of sparrows in the locality. He had also heard the song of what he supposed to be a thrush. Though blackcaps, whitethroats, and numerous other songsters had been singing the whole day, their notes had gone in at one ear and out at the other. He could not recall one of them, and hardly noticed them at all. Next morning, as he is in the middle of a grand piece on the piano, the naturalist comes, with the remark, "You have been playing to a dull audience, I have just been looking at my pigs, and they snored all the time you were playing." "Oh, the brutes cannot hear." "Can't they though? They woke up sharp enough when the meal-tub was opened." The piano was not in the pigs' line, but the creaking of the meal-tub hinge was sweet music to them. The musician goes on with his piano and the other settles down to his observations. He notices some caterpillars of the Peacock Butterfly suddenly drop from the nettles on which they were reposing. A chord had been struck on the piano which caused the box in which they were to vibrate. They let go their hold, and fell to the ground, as is their habit when frightened. The sound of the music did not appeal to the caterpillars, or even frighten them, until the shaking made them imagine an enemy was at hand. This was what the naturalist thought, but he also speculated as to what would be the effect on them if the hum of the wing of their arch-enemy, an ichneumon-fly, came within measurable distance of where they were. During a lull in the music, the naturalist, who was looking at a death-watch in a pill-box, hears a faint tapping like the ticking of a watch at the other end of the room. In an instant the death-watch, which hitherto had been apparently asleep, is all life and animation, and begins to tap in a similar way. She has found her mate, and has heard whisperings of love. The notes of the piano roused no action in the death-watch, but the distant quiet tap did; and her sensitive powers drank in at once the sounds she longed to hear. Mr. Yearsley tells us that "The specialisation of hearing has reached a delicacy of detail in man which is not found in the lower vertebrates." As far as detail is concerned this is no doubt true. But it is also true that many of the lower animals emit and hear sounds beyond the reach of the human ear. It requires the aid of the microphone to show us that the house-fly trumpets somewhat after the fashion of an elephant, and makes a noise with its feet like a horse walking on a road. Sounds like these are probably of great importance to the denizens of flydom. They force us to conclude that many animals low in the scale of creation communicate with each other by means of sounds utterly beyond our senses and powers of imitation. No wonder, then, that they are indifferent to our experimental noises that are of no use, and convey no meaning to them; and that these noises only rouse them to action when they cause fright or annoyance.

Southacre, Swaffham,
August, 1906.

Edmund Thos. Daubeny.

402. Tasmanian Jottings: Intoxicated Bees.—In some English periodical not long ago I noticed a paragraph concerning honey-bees becoming intoxicated with excess of sweets in certain flowers, and lying there unable to move. There is in Tasmania a little native bee, black, with grey bands and greyish legs, which appears to make a home by burrowing in the soil. This little hymenopter is fond of visiting the flowers both of the introduced Dandelion (*Taraxacum officinale*), and of the Cat's-Ear (*Hypochæris radicata*), which latter has spread so rapidly since its introduction, that hundreds of acres of grass land are yellow during the summer with its flowers. One spring day I noticed three of the native bees in Hypochæris flowers, two packed together in one blossom, the other alone in a second flower, but all so absorbed in their feast, or so intoxicated thereby, that they took no notice when touched, and it was only after being removed from the blooms and held in the hand that they could be induced to fly. During the week following, others of the same species were found in Dandelion flowers in a similarly stupefied condition. Richard Jefferies says of wasps: "If they find something sweet and tempting they stick to it and swill till they fall senseless to the ground." He found them sitting round apertures in the trunk of a pear-tree, from which sap was slowly exuding, and "to this the wasps came and sipped until they could sip no more." In this connection it is interesting to note that a correspondent of the *Melbourne Argus* has recently observed the same intoxication in birds; he says: "I have noticed a peculiar thing with regard to Minahs during the fruit period, and it is the fact that many of them become quite stupid, and seem to lose the power of flight to a great extent." On this is commented: "When Honey-Eaters get a surfeit of honey they become stupefied, and often die. The rich juices of ripe, soft-fleshed fruits may produce the same effect in other birds."

403. Spring Flowers.—By taking a ramble over the plains during the spring month of October, many interesting plants may be found in bloom. A shrub with trifoliate leaves and yellow, pea-like blossoms, has smooth reddish bark, and its branches are slender and inclined to droop: the flowers are marked at the entrance with little reddish streaks to attract insects. This is called the Clover-Tree (*Goodia latifolia* Sal.). Another small leguminous shrub has pinnate leaves and purple flowers, and is popularly known as Native Indigo (*Indigofera australis* Willd.). Two slender-stemmed plants with very sweet-scented, open, purplish blooms are the Tetrathecas (*T. pilosa* and *glandulosa* Lab.). They grow in great profusion on the poor sandy land, which, indeed, produces the best of our wild flowers. Another plant, probably an *Oxalis*, with trifoliate leaves and pleasant-smelling yellow flowers, was also found in the same locality, and several orchids, including the yellow "Butterfly" (*Diuris sulphurea* Br.), the "Spider" (*Caladenia pulcherrima* Muell.), and a small pink one. A most extraordinary orchid is the "Native Potato" (*Gastrodia sesamoides* Br.), which has been found once or twice in bloom beside the bush-road. The tubers much resemble the edible potato, but are very acrid and unpleasant to the taste: they are found parasitic upon the decaying root of a stringy-bark tree (*Eucalyptus obliqua* L'Her.). A tall, brown, leafless stem is sent up, the only approach to leaves being a few small close-fitting scales at intervals up the stem: at the summit are borne rather large bells, brown outside, white within. The prevailing brown tint, and utter absence of anything green, combined with its large size, give this orchid quite a weird appearance, when one comes suddenly upon it in the bush solitudes.
H. Stuart Dove.

404. Honey-Dew.—No. 388. The reason why "the glaze occurs on the upper surface of the uppermost leaves of trees not overhung by others, or on the upper surface of leaves on long sprays projecting beyond the rest of the tree," is probably this. At certain times of its existence the aphis becomes a winged insect, and may be seen on any part of the tree. It ejects honey-dew as it flies, but not in the same quantity as when it is wingless. It grows wings when hard up for food and when its food plant has begun to mature, or is not sufficiently tender and juicy to meet its requirements. Edmund Thomas Daubeny.

405. I beg to give you the result of my observations of honey-dew for this year. The spring was bitterly cold with some frosty nights, which damaged the crops of fruit, especially of plums. Afterwards, we had some very hot days, the

thermometer approaching 80°. It then became cool. Previous to the continued hot, dry weather of July and August, and in June, I observed that there was a profusion of honey-dew on the sycamore and lime-trees. Some of the sycamores that were infested were full of blossom, but the blossom had not then come out on any of the lime-trees. In consequence of the backward spring, all trees that blossom after leafing were late in blossoming. I also noticed that there was a great deal of honey-dew on the poplar, oak and bramble, in some localities. I have not seen any honey-dew on plane or acacia trees. In July, many of the limes that were infested with honey-dew became loaded with blossom, so the lady who suggested that little or no honey-dew ever came on trees that blossomed freely, I think must have been mistaken, although she had correctly noticed that on a certain year all trees flowered freely and all were free from honey-dew. Throughout July, honey-dew was very profuse on lime trees. A very hot summer without rain, has a tendency to arrest the growth of plants. The cold spring and dry summer of this year were particularly calculated to have this tendency. Might not honey-dew be caused by the arrested growth of the plant, the sugary juices finding a vent on the upper surface of the leaves when acted on by a hot sun? Mr. Whiting's observation that the flow of honey-dew is much more liquid at night than in the daytime is worthy of attention.

Hampstead, August 15, 1906. PETER HASTIE.

406. Lightning and Beech Trees.—The effect of lightning upon beech trees was the subject of an interesting statement made by the coroner (Mr. Dossey Wightman) at an inquest at Hemingfield, near Barnsley, on two miners, Mark Kaye and Joseph Beaumont, who were killed by lightning whilst sheltering under a beech tree. Six men were under the tree, but none could state what occurred beyond the fact that they were suddenly knocked down insensible, after being under the tree for five minutes. The coroner said he had been to examine the tree, as the accident raised a very peculiar question. For years he had read and understood that there was no record of a beech tree being struck by lightning. Ninety-nine out of every hundred trees which were struck were oaks. In this case the lightning had not injured the tree to the extent of damaging a leaf. It appeared to him to be a remarkable circumstance after what he had understood for so long, and he should record the fact that it was a beech tree in the verdict.

NATURAL HISTORY QUERIES.

88. Robins "Killing their Parents."—Can any one tell me what is the truth (if any) underlying the popular belief that in the autumn Robins kill their parents? I find it is very widely spread. May it not perhaps be explained in this way—Cock robins are extremely pugnacious little fellows, and as soon as one of them sees another, he at once "goes for him," irrespective of any fact of relationship? A really old bird would, of course, be weaker than a younger one, and would thus be at a disadvantage. Why the autumn should be the chosen time for conflict I fail to see.

Ropley, Hants, August 7, 1906. MARIE S. HAGEN.

89. Sex in Swallows.—How do you distinguish the two sexes of the swallow and house martin? W. E. IVERY.

90. Hearing in Insects.—Would Mr. P. Macleod Yearsley kindly tell us how it is that snails frequently squeal if you put your heel on them, and attempt to kill them, and how it is that lobsters squeal if they are put into boiling water? Would any creature squeal for protection from danger, unless it could hear the sound it made? PETER HASTIE.

91. Ants.—What is the best remedy for getting rid of ants which have taken possession of the kitchen and scullery of a house? H. J. V.

92. Leaf-cutting Bees.—We have been much interested this summer in watching several bees in our garden. These bees have been flying with pieces of leaf, rolled up, and carried in their back legs. One bee, we noticed, put its bit of leaf, whilst apparently resting, on a garden seat, then picked it up and resumed

its flight. Can you inform us as to the cause? The leaves we have observed the bees carrying are not withered, but freshly picked. Do the bees gather them themselves?

Oak Manor, Battledown, Cheltenham, July 24, 1906. LENA SHAW.

93. Clover Growing in Circles.—We have recently made, and sown with grass seed, a new croquet-lawn. The grass does not seem to "do" very well, and quite a third of it has (to use an Irishism) come up white clover. This grows almost entirely in *circles*, which at a little distance have much the same appearance as "fairy rings," and the general effect is very curious. What can be the reason of this strange manner of growth?

Ropley, August 7, 1906. MARIE S. HAGEN.

94. Plants on the Chalk.—Referring to my note on "Plants on the Chalk" (No. 389 of your August issue), I enclose a photograph of the patch of *Echium vulgare* referred to in it. The tallest spike we could find measured four feet. On a recent visit to the same place, I found a specimen of *Salvia verticillata*. Is this species becoming colonised? I found a plant of it a few years ago in some waste ground at Norwood, and it was identified for me at Kew or Kensington. It is not, as far as I am aware, a garden plant, and is not mentioned amongst the numerous species of sage referred to in my copy of Robinson's "English Flower Garden" (1883 edition).

Walton-on-the-Hill. M. TEESDALE.

REVIEWS AND EXCHANGES.

Familiar Trees. By Prof. G. S. Boulger. Parts I. to VI. Cassell and Co. Price 6d. net each part.

It is nearly thirty years since the present editor of NATURE NOTES first described our British Trees in the *Journal of Forestry*. His series of papers, entitled "The Beauties of British Trees," was intended to direct the attention of artists and of the non-botanical public to the beauties which a detailed study of our trees will reveal. At the request of Messrs. Cassell these articles were rewritten and extended so as to include familiar but non-indigenous species, and were issued between 1886 and 1889 in forty parts, each describing one species, and illustrated by two chromo-lithographs, one of the whole tree and the other of details of flower, leaves and fruit, from water-colour studies, by W. H. J. Boot, R.B.A. It was the first book on British trees to be illustrated in colour. The whole book has now been revised, the trees described being nearly half as many again as in the original issue. The present edition is to be completed in twenty-nine parts, issued fortnightly, each containing two subjects. The additional coloured plates, bringing the number up to 114, are from the very skilful brush of A. F. Muckley, and each tree is also illustrated by an uncoloured photograph from Nature, these pictures being the work of various eminent artists. A novel feature of scientific interest is the reproduction of a complete series of micro-photographs of the woods of the species, magnified ten, or in most cases, thirty diameters, by Messrs. J. A. Weale and F. W. Saxby. The use of the three-colour process enables the publishers to issue the work thus enlarged at little more than half its former price.

Animal Heroes. By Ernest Thompson Seton. With two hundred illustrations. Archibald Constable and Co. Price 6s. net.

A new book by Mr. Thompson Seton is an event, a red-letter day for Nature-lovers. His pen and pencil have lost none of their cunning, though the stories in this volume are not as uniformly sad in their *dénouement* as in some of the author's previous productions. On the whole, we like "The Slum Cat," the best of the eight biographies, though "The Legend of the White Reindeer," in which the author transfers the scene to Norway, is the most poetically told. Of the full-page drawings we prefer "The Pirates in Ambush." It is needless to add that the whole book is, like everything Mr. Seton writes, thoroughly Selbornian in in spirit.

The Birds of the British Islands. By Charles Stonham. With illustrations by L. M. Medland. In Twenty Parts. E. Grant Richards. Part I. Price 7s. 6d. net each part.

This is the first part of a truly magnificent quarto. It is excellently printed on pure rag paper, and contains sixteen plates, printed separately, besides two showing the "topography" of a bird's plumage. There will in the complete work, the parts of which are not sold separately, be three hundred or more illustrations, which are all original, and seem to be reproduced in black by some photogravure process which admirably renders the texture of the artist's work. Neither nests nor eggs are figured; but in his concise but most careful descriptions the author gives the average egg-measurement from Dresser's "Manual," together with a full discussion of the derivation of the names and an account of the plumage sufficient to enable any one to identify the birds.

A Pocket-book of British Birds. By E. F. M. Elms. West, Newman and Co. Price 2s. 6d.

This appears to us a useful companion for the field ornithologist. Arranged in scientific sequence the birds may be difficult for the tyro to identify, and we do not altogether agree with the author in his reasons for omitting local names; but, when once the species is known, we have here concise, accurate, well-tabulated notes on migration, haunts, language, habits, food, nesting period, site and materials, and eggs, together with the predominant features of the plumage. The book has an index: it is well printed and serviceably bound; and has at the end some blank pages for notes; whilst it is neither too large nor too heavy for the pocket.

A Revised Key to Hepatics of the British Islands. By Symers M. Macvicar. Eastbourne: V. T. Sumfield, Station Street. Price 9d.

This is a dichotomous key, based on the underleaves, to the genera and species of our Hepaticæ, the nomenclature being that of the Moss Exchange Club Census Catalogue. It cannot fail to prove useful to the collector. In the latter portion (pp. 9-19) the genera are arranged alphabetically, with a separate key to the species of each of them. As the previous key is headed (p. 5) "Genera," there should, we imagine, have been a corresponding heading, "Species," on p. 9.

The Butterflies of the British Isles. By Richard South. F. Warne and Co. Price 6s. net.

Whilst Mr. South's name is a guarantee of its scientific accuracy and thoroughness, the publishers have succeeded in making this little volume a very marvel of cheapness. Of the thirteen thousand known species of butterflies, some seven hundred belong to the Palæarctic Region, but not more than sixty-eight at most can be considered as British. Figuring, however, not only every species but many varieties, the author gives us no less than 450 coloured figures from photographs, besides uncoloured drawings of the egg, caterpillar, chrysalis and food plant of each species. After an adequate introduction describing the life-cycle of a butterfly and the methods of collecting, mounting, &c., we have 170 pages devoted to the individual species, a classified list of their scientific names, and an index. Got up, as it is, in pocket size, measuring only 6½ by 4½ inches, and with round corners to its simple blue cloth cover, the book is in every way adapted as a companion to the field naturalist.

The Homeland Handbooks: King's Lynn with its Surroundings. Price 1s. net. *Dorking and Leatherhead with their Surroundings.* Price 1s. net. And *Harold's Town and its Vicinity, Waltham, Cheshunt and High Beech.* Price 6d. net. Homeland Association.

This excellent series of handbooks—guide-books which are well worth reading again and again even by the stay-at-home—have set their own standard of comparison. No one could have been selected who would have been likely to do more justice to King's Lynn, with its ruined monasteries and gates, its churches and brasses and other relics of the merchant princes of a bygone age, to Castle Rising and to Sandringham, than Mr. W. A. Dutt; but in the wealth of his archæological material, we miss the references to the fauna and flora which appear in other volumes of the series. If Mr. Joseph Morris has a less romantic story to tell of Dorking, Box Hill, Leith Hill, Wotton and Leatherhead, and

seems less saturated with the details of his subject, the main fault we have to find with this volume is a technical one: it is somewhat too loosely stitched. Such books should stand somewhat rough handling in the pedestrian's use of them.

Whatever wood the chairs within the sacrarium at Waltham may be made of, no tulip-tree "flourished for centuries in the old Abbey gardens," until at least the Abbey of Harold had long ceased to be an abbey; for the tulip-tree is an American species not known in Europe till the close of the seventeenth century. Mr. Bunting should, moreover, have pointed out that Waltham Cross has been considerably restored in modern times. These are, however, but small matters, and his book is on the whole an excellent guide to some interesting spots which lie very close at hand for dwellers in the metropolis.

Country Rambles round Birmingham and Week-end Holidays. By Edgar Brooks. Illustrated. Allday, Birmingham. Second Edition. Price 6d.

This is a modest treatment of a big subject. Mr. Brooks ranges from Elmley Castle and Broadway to Church Stretton, and though he has fourteen pretty photographic illustrations and generally mentions railway-fares and recommends hotels, Lichfield is dismissed in a page of six little paragraphs. If the author will study the productions of the Homeland Association and Mr. "Walker Miles," he will learn how to educate the people of the Midland metropolis to appreciate their surroundings.

A Text-book of Botany. Part I. The Anatomy of Flowering Plants. By M. Yates. Whittaker and Co.

In its host of short formal definitions of anatomical terms, this little book resembles the catechisms of forty years ago. It contains over 400 illustrations, but most of these are seriously disimproved by having obviously been drawn by one unaccustomed to this class of work. Etymologies and—more important by far—examples are given throughout, and the chapter on fertilisation, though very brief, is well done, though we do not understand the printing of opening words such as "A few plants," "They are small" and "Enormous quantities," in black type. We also notice that, while *Gynandropsis* and *Ampelopsis* appear with small initials, such specific names as *vulgaris* and *officinalis* have capitals. We are not sure that students ought not to get such matters into their own note-books and their heads from what they see in the laboratory or on the blackboard; but we know from experience that such a summary is often useful to the teacher as a reminder of the numerous varieties of form. For years we used Dr. Cooke's "Structural Botany," and Lindley's "Descriptive Botany," in this way.

How to Find and Name Wild Flowers. By Thomas Fox, F.L.S. With an Introduction by F. E. Hulme, F.L.S. Illustrated by the Author. Cassell and Co. Price 1s. 6d., or in cloth 2s.

There is a constant danger besetting the botanical tyro that he may look upon the name of a plant as an end in itself; whilst to "develop the powers of close observation, careful contrast and absolute verification" we know of no method better than the study of some complete flora, such as "Hooker" or "Babington." Beginners will, however, shirk this difficult counsel of perfection for any "royal road" to a name, especially an "English" name. It would certainly be a gain if we had in England, at the price of three or four shillings, such a complete systematic flora as those provided for French students by MM. Bonnier and De Layens: as it is, Hayward's unillustrated "Botanists' Pocket Book" is our nearest substitute. In this pleasingly light, well-printed and cheap volume (which is rather too "tall" for pocket use) the author arranges some 1,200 British flowering plants, a fairly large proportion of the whole, primarily according to their average month of flowering, secondarily by colour, and thirdly by size. He gives a brief but well-illustrated glossary, and in Part I. uses only "English" names, such as "Blunt-fingered Speedwell" or "Calycine Alyssum." By numbers here affixed it is possible to refer to Part II. in which the scientific names are given in systematic order, with the average day of flowering and the geographical range. The nomenclature adopted is that of the "Students' Flora," and the text is commendably free from misplaced capitals and other misprints. We cannot see that the few photographic illustrations add in any way to the utility of the book.

School Gardening for Little Children. By Lucy R. Latter. With an Introduction by Prof. Patrick Geddes. Swan, Sonnenschein and Co. Price 2s. 6d. net.

This is an eminently practical guide-book for teachers in kindergartens and schools for little children, by a writer who knows from personal experience what she is writing about. It teaches the proper standpoint: it furnishes complete, practicable and simple plans of work; and it also gives plentiful lists of books for further information. We cordially recommend it to all teachers in such schools, whether in country or in town.

Our School Out-of-Doors: a Nature Book for Young People. By the Hon. M. Cordelia Leigh. T. Fisher Unwin. Second Edition. Price 2s.

"The writer supposes the teacher to be taking the scholars for a country walk twice a month throughout the year," and the book is itself apparently meant as a "reader" between whiles. It covers a wide field, protective colouring, clouds, snow-crystals, the physiology of crops, mosses, tadpoles, fins, "composites," insect-pollination, wings, the life-cycles of insects, worms and their work, &c., and for the most part covers it well. It may be doubted whether it is well to talk to children of the "atmosphere," the "ether," "nitrates and phosphates," "cartilage" and "tissues"; while it is quite certain that the Lesser Celandine is not the "pillwort," that the "gems" of mosses are not "cells," or the "spikes" of the gorse "hardened leaves." The information is sometimes laid on too thickly, as in the following passage: "More than 100,000 of these little mouths have been counted in one leaf of an apple tree. The leaves are eaten by horses, cows, sheep and goats. A yellow dye is made from the bark." After this comes Glastonbury and pomatum, all in one half-page!

Insect Pests of the Farm and Garden. By F. Martin Duncan. Swan Sonnenschein and Co. (The Naturalists' Library). Price 2s. 6d. net.

In this business-like little work, by one who bears a name honoured in the annals of Natural History, we have what appears to us to be the first volume of a new series; and we can only prophesy that, if the succeeding volumes are as good, they are likely to meet with wide acceptance. After a general account of the structure and classification of the Arthropoda, the author gives a chapter on insecticides, and then describes upwards of forty kinds of pests *seriatim*, treating of their life-histories and modes of attacks, and of the remedies against them. Photographic illustrations of most of these pests are given, so that the book is one well adapted for the use of the farmer, the amateur gardener, or the beginner in an agricultural or horticultural school.

The Hampstead Garner. Compiled by A. M. C. With a Preface by Clement Shorter. Elliot Stock. Price 3s. 6d. net.

We confess to being somewhat disappointed in "The Hampstead Garner." True, it contains dainty sonnets by Leigh Hunt; and, perhaps, nearly every actual mention of the place in English poetry; but it also contains much that is only connected with Hampstead by the fact that the writer visited that "Northern Height," and most of its contents are the merest scraps. We looked for an anthology and found a birthday-book.

Plants and their Ways in South Africa. By Bertha Stoneman. Longmans, Green and Co. Price 3s. 6d.

In 1869, Professor Daniel Oliver adapted his "Elementary Lessons in Botany," for the use of residents in India. Similarly, Mr. Edmonds's "Elementary Botany" has been adapted for South Africa, and Professor G. Henslow, a casual visitor, has provided an excellent introductory work for the same colonies in his "South African Flowering Plants," which we reviewed not long since. It is, however, an excellent sign of the sound direction which science-teaching is taking in this distant land, that we have in this work the production of a teacher resident on the spot. The examples are thus all taken from plants which will be familiar to the pupil, whilst the teacher's own outlook upon the plant world has gained a freshness which is absent from books originally written in Europe. Many of the chapters, such as "A Study of Leaves," "Waterways in Plants," "The Food-making of Plants," and "Plant Defences," are admirable; but in those meant for reading-lessons, which are, perhaps, a mistake in principle, and in some

others, we seem to see the love of imparting information somewhat too strongly evinced. It is most important that all teachers should recognise the heuristic principle, though it may have been exaggerated. Seven pages devoted to cryptogams might just as well have been omitted ; and we cannot help thinking that in Chapter XIX. too many genera are enumerated. The summary of the botanical regions of South Africa which, with an index-map, concludes the book, is an excellent feature.

The Country Press Pictorial Postcards : Leaves of British Trees and Shrubs (two sets of six each) ; *British Trees* (two sets). The Country Press. Price 6d. per set.

These postcards are printed in monochrome from the Nature-prints and photographs illustrating works by Mr. F. G. Heath. The two packets illustrating leaves comprise one hundred and twenty-five figures representing thirty-nine species ; and, though they only show the coarser veins and lack the autumn tints so well reproduced in Mr. Heath's original work, they are of distinctly educational value. The cards in the other two packets each represent one tree, or its bole, viz., beech, chestnut, horse-chestnut, maple, oak and walnut, and first-rate examples have been chosen.

Manuring. By E. O. Greening. Agricultural and Horticultural Association. Price 1d.

This is the sixth of the One & All Garden Books and fully explains the principles and practice of manuring with the wealth of pictorial illustration characteristic of the series.

The Museum Gazette. Conducted by Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D. Nos. 1—3, May—July. John Bale, Sons and Danielsson, Ltd. Price 6d. monthly.

We welcome the appearance of our new contemporary. The first number appeared as "The Haslemere Museum Gazette ; a Journal of Objective Education," without any editor's name ; but any one acquainted with "The Home University" would have recognised the controlling mind of Dr. Hutchinson, whilst readers of "Nature Study" would have detected the work of Mr. Swanton. The second and third numbers bear the title "The Museum Gazette and Journal of Field-Study. Conducted by Jonathan Hutchinson F.R.C.S., F.R.S., LL.D., assisted by E. W. Swanton and many others." As might be anticipated, the contents are delightfully varied. The adaptation of structure to function, the outdoor natural history of the season, and the organisation of educational museums are alike prominent, while the importance of history, literature and art is never overlooked. The July number and the forthcoming issue for August are chiefly devoted to seaside natural history, and the fact that the former contains no less than seven plates on special plate-paper shows that at sixpence a month *The Museum Gazette* is cheap indeed.

East Kent Scientific and Natural History Society : Report and Transactions for the Year ending September 30, 1905.

Together with reports of a few papers on such general topics as Bacteria, Planetary Evolution and Polarised Light, this annual report of an old-established Society contains valuable local matter, such as papers on the initial cause of the Dover Valley and on the intermittent streams of East Kent, and, in addition to full meteorological records, an illustrated account of a new wild hybrid between *Ophrys muscifera* and *O. aranifera.* Those who remember him will be glad to have the portrait of the late George Dowker which forms the frontispiece to the Report.

Proceedings of the South London Entomological and Natural History Society, 1905-6. Price 2s. 6d.

If "Notes on the Entomology of the Hawaiian Islands," or an account of the American *Eurymus Eurythene*, are somewhat out of place in the "Proceedings" of a South London Society, this complaint does not apply to the learned papers by Mr. Tutt and Mr. Adkin on "British Plume Moths," and on the Lengthened Pupal stage respectively, nor, we think, to purely general papers such as Mr. Scourfield's capital account of Mendelism. The illustrated account of the Chart field meeting and the plate of the varieties of *Aplecta nebulosa* contribute to make this a most valuable volume.

Transactions of the Hull Geological Society, Vol. VI., Part I., for 1901-5. A. Brown and Sons. Price 2s. 6d.

Hull is the centre of a district of profound geological interest, so that students in other areas look to it for valuable information on boulders, coast-erosion and similar topics, and, as this volume shows, they do not look in vain. Mr. C. G. Danford's illustrated paper on the Belemnites of the Speeton Clay is a good example of local work, whilst Mr. Harker's on the "Problem of the Gneissic Rocks" shows that the Society can attract able assistance from without.

Horniman Museum and Library: Fourth Annual Report, 1905. Price 1d.

One of the most generally interesting items in this purely business Report is a plate of one of those survivals from primitive times—a Welsh coracle.

Irish Gardening: a Monthly Educational Journal devoted to the Advancement of Horticulture in Ireland. No. 3. May, 1906. Dublin. Price 2d.

Judging from the presence of papers by Professor T. Johnson on the American Gooseberry Mildew, Mr. Moore, of Glasnevin, on Rhododendrons, Professor George Carpenter on the Black-currant Gall-mite, and others of equal value, and from the general get up of this new periodical, it should have a long and useful career.

The Animal World, since the beginning of the present year, has been appearing in a new, handier and, we think, generally improved form. With contributions from Mr. Oliver Pike, Mr. Percival Westell and Mr. Shepheard-Walwyn, Natural History is not likely to be neglected, and the quality of the illustrations is also much higher than it was.

The Country Gentleman's Estate Book, 1906. Edited by William Broomhall. The Country Gentlemen's Association.

This bulky volume of over 400 pages, exclusive of advertisements, contains much matter of permanent value or useful for reference. There are, for instance, numerous tables for calculating measures and values, a coloured geological map of the British Isles, and articles by recognised authorities on estate management, taxation, farm-buildings, forestry, gardening, &c.

Received: *Bulletin of the New York Botanical Garden, Vol.* 4, *No.* 13; *The American Society for the Prevention of Cruelty to Animals, Fortieth Annual Report for* 1905; *The American Botanist* for November and December, 1905, and for April, May and June, 1906; *The Nature Study Review*, February—May; *The Plant World*, February—June; *Bird-Lore* and *The Victorian Naturalist*, March—June; *Our Animal Friends*, April and May; *The Estate Magazine*, April—July; *The Humanitarian*, May—July, and *The Naturalist, The Irish Naturalist, Knowledge, The Animal World, The Animals' Friend*, and *The Agricultural Economist*, May—August.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

New Members.—*Central Society.*—The following members stand for election: Miss Maude Maxwell-Witham, S. P. Stephens, Esq.

Subscriptions.—The Council has pleasure in acknowledging subscriptions of greater value than 5s. from the following members: Dr. Dudley Buxton, £1 1s.; Sir James Colquhoun, £1.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings of September 17 and October 15, for the purpose of issuing books to Members.

EXCURSIONS.

Saturday, July 14.—Favoured by delightful weather, a good muster of Selbornians assembled at Rickmansworth Station, from whence the ramble commenced. Entering Rickmansworth Park, the party proceeded along an avenue of magnificent limes, the sweet fragrance of whose flowers was especially refresh-

ing in the warm air. A particularly large and symmetrical specimen was pointed out, which covered an area having a diameter of at least a hundred feet. Homes of the woodpecker and other birds were discovered and explored, and the methods of their respective inhabitants explained. The party then made its way through Loudwater Park and along the Chess Valley, where an abundance of extremely interesting botanical pabulum was obtained; nests of the sedge-warbler, linnet, butcher-bird, greenfinch, and other birds were investigated, and much mutual information was exchanged. Across the river and fields we went up to Sarratt, where a welcome tea at the "Cock," partaken of in an orchard, under the shade of trees laden with luscious black cherries, was entirely appreciated. A peep at the church, with its Jacobean pulpit and saddleback roof, and then for home, through golden auburn cornfields, whose beauty drew expressions of admiration from all; past the placid hamlet of Micklefield Green, and so to Chandler's Cross, where a slight halt was utilised for a discussion on the varying nests and methods of swallows and martins. Then came the avenue of Finch's Wood, whose tall and stately elms, with their high and interlacing branches, seen in the failing light, recalled the richly groined arches of some magnificent cathedral, a scene so impressive as to cause frequent pauses in order to appreciate its grandeur. A pleasant walk brought the party across Croxley Green, and with a minimum of high road, it once more reached Rickmansworth Station, conscious of an afternoon well spent in the true spirit of our Master at Selborne.

Saturday, July 21.—Eighteen Selbornians assembled at St. Albans, and passing across Victoria Street—now a busy thoroughfare and one of the main streets in the city, but formerly an old country road known as Sweetbriar Lane—a move was at once made for the County Museum in Hatfield Road. Here a choice collection of local pictures from the pen and pencil of the late Mr. F. G. Kitton was much admired, as well as the various collections of birds and butterflies, coins, geological specimens, Roman pottery, flint implements, &c. Although the museum is in its infancy, the general excellence and well-set-out arrangement of the collections in a restricted space (especially the life-histories of insects, &c.) were much admired. Mr. Westell, the guide, briefly commented upon some of the birds, and pointed out other objects of interest. St. Peter's Church, where many of those slain in the battles of St. Albans lie buried, was next visited, a short paper being read there, and then Pemberton's Almshouses, the site of Hall Place (recently demolished) and St. Peter's Street (the site of the two battles of St. Albans) were passed in turn. The site of the Castle Inn (now a tobacconist's shop), where the Duke of Somerset was slain, reminded the party of the reference to this fact in Shakespeare's "Henry VI." (Second part, Act 1, Scene iv.); and an old Tudor house, with a wrought iron balcony in front, was pointed out as the one-time home of Lady Alicia Jennings, and probably the house occupied by the Mayor of St. Albans when he presented an address to Queen Elizabeth on her way to Gorhambury. The old Moot Hall (now a stationer's shop) was shown, this being the building in which the rioters in Wat. Tyler's Rebellion were tried in 1381, and where Henry VI. held a Council of his nobles in 1455. French Row (so called because it was occupied by the French in 1217) was next traversed, and the quaint old houses and inn-yards afforded much interest.

The Clock Tower, the spot where an Eleanor Cross once stood, and the site of the Wax House Gate to the Monastery, were duly noted, and a short walk along the old High Street brought the party to the top of Holywell Hill, from which a superb view of well-wooded St. Stephens is obtainable. The old inn-yards in Holywell Hill were noticed *en route*, this being part of the old coaching road, and the quaint architecture, as seen from the inside of the yards, was much commented upon as interesting links with the past. The White Hart Hotel, where Simon, Lord Lovat, when on his way to the Tower, gave a sitting to Hogarth, was pointed out, and this brought the Selbornians to the old Sumpter Yard, where the pack mules which brought goods to the Monastery were unloaded. The residence of the present Bishop was passed, and then the fine old Abbey was examined, both from the outside and within. It is impossible in our restricted space to mention the many interesting things pointed out here. The Shrines of St. Alban and St. Amphibalus, the various Chantries, the painted ceiling, the frescoes, the magnificent Wallingford screen, the Tower, the Lady Chapel, the Saint's Chapel, the Watching Gallery, &c., were all

examined, and explained in great detail by Mr. J. Watkins, one of the most painstaking and informing vergers at the Abbey. The Monastery Gateway, and the site of the martyrdom of George Tankerfield were next visited, after which tea was taken at the "Fighting Cocks," the oldest hostelry in England, and the old boating-house of the monks. After tea the River Ver was crossed, and a path taken along the old causeway to the site and ruins of Verulamium. Here an interesting paper was read by Mr. Westell, and a move was then made across the fields to St. Michael's Church. The fine old Jacobean pulpit (not forgetting the iron frame attached for holding an hour-glass) was greatly admired, and homage was paid at the famous statue of Sir Francis Bacon, Baron Verulam and Viscount St. Albans. Various other interesting objects in St. Michael's were noted, after which a walk along old Fishpool Street, and then by the banks of the Ver, and on through the busy Saturday night market-place, brought the party to the Midland Railway Station, after what was unanimously voted to be a most enjoyable and instructive outing.

Saturday, July 28.—The route chosen was from West Drayton to Iver, and the party numbered thirty-six, including some of the members of the Ealing Microscopical Society, which accords to local members of the Selborne Society the privilege of attending its winter lectures. The arrangements were very much the same as have been made on previous occasions during the last five years. The party walked along the footpath on the south side of the Great Western line to the Thorney Weir Fishery, and afterwards, by permission, up the left bank of the river to the canal. The latter was then crossed, and Iver Water Splash reached. As usual, Iver church was visited, where, under the genial guidance of Mr. West, the Verger, its interesting font and monuments were seen, as well as the view from the top of the tower. The return journey was made through the fields and along the right bank of the river.

FORTHCOMING EVENTS.

Council and Committee Meetings.

Monday, September 17.—Publications Committee at 5.30 p.m.

Tuesday, September 25.—Council Meeting at 5.30 p.m.

Excursions.

Saturday, September 1.—Epsom and Walton Heath. Meet at Tattenham Corner at 2.36 p.m. Trains leave Charing Cross 1.25, Cannon Street 1.36, and London Bridge (S.E.Ry.) at 1.51. *Passengers from Charing Cross and Cannon Street change at London Bridge.* Take cheap return tickets to Tattenham Corner, 1s. 6d. Return train at 7.32, but if a sufficient number write to the Excursions Secretary before August 28, the cheap tickets will be made available for return from Tadworth at 9.5 p.m. Guide, Miss Giberne.

Saturday, September 8.—Epping Forest. Meet at Chingford Station at 3 p.m. Trains from Liverpool Street at 2.8 and 2.39 p.m. Fare 1s. return. Walk to High Beach *viâ* Fairmead, returning *viâ* Sewardstone Green and Bury Wood. Tea at "Duke of Wellington" at 5.30. Guide, Mr. C. Nicholson.

Saturday, September 15.—Special geological excursion to Ightham, Kent. Train leaves St. Paul's Station for Kemsing at 1.17 p.m. Cheap return tickets 3s. 2d. Members intending to join must write to the Excursions Secretary before September 10, and be at the station to get their tickets from the Secretary by 1.7 p.m. Walk from Kemsing to Ightham, and return from Wrotham at 7.21 p.m. Walking distance 5½ miles. Mr. Benjamin Harrison will kindly show his collection of Eoliths. Guide, Dr. Hinton.

Saturday, September 22.—Woldingham, Titsey Hill, and Oxted. Meet at Woldingham Station (S.E.Ry.) on arrival of train leaving London Bridge (Low Level, S.E.Ry.) at 2.13 p.m., Charing Cross 1.47, and Cannon Street 2.5. *Passengers from Charing Cross and Cannon Street change at London Bridge.* Cheap return tickets 1s. 10d. The cheap tickets are only available by these trains. Return from Oxted at 6.32 or 9.40. There is a return train on the L.B. & S.C.Ry. at 8.19; members desiring to return by this should take single tickets from London, 1s. 5d. Tea at Botley Cottage, Botley Hill. Guide, Mr. C. M. Muhlberg.

Saturday, September 29.—Rickmansworth, Chess Valley and Chenies. Train leaves Baker Street at 2.20 p.m. Take return tickets to Rickmansworth, 1s. 11d. Return from Chalfont Road, excess fare 4d. Guide, Mr. H. H. Poole.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Hon. Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

ANSWERS TO CORRESPONDENTS.

W. M. Scott.—Probably *Salix prostrata* Sm.

A. Bonus.—The moth is *Amphidasis betularius*, var. *doubledayaria*, an uncommon melanic variety of the common Pepper-and-salt Moth.

F. M. Millard.—*Erigeron canadensis* L.

Mrs. Needham.—I am afraid I cannot identify the shrub from the specimen sent.

Omega.—It is difficult to name "interesting, reliable text-books, illustrated in accurate colours," as the best text-book writers discourage the reliance on coloured illustrations, and enforce the lesson that the beginner must expect some drudgery in obtaining accurate knowledge.

(1) Hulme's "Familiar Wild Flowers" and Step's "Wayside and Woodland Blossoms," two series, price 6s. each, are fairly coloured, but are not complete nor scientifically arranged. C. P. Johnson's "British Wild Flowers," illustrated by Sowerby, is a more complete, but much more expensive work. Johns' "Flowers of the Field" (S.P.C.K.), or Bentham and Hooker's "Handbook of the British Flora," with the volume of illustrations by W. H. Fitch and W. G. Smith (about a guinea), are accurate, but uncoloured.

(2) A remarkably cheap series are "Our Country's Birds," "Our Country's Butterflies and Moths," "Our Country's Animals" (including Reptiles), by W. J. Gordon (Simpkin, price 6s. each); but the colouring is necessarily somewhat crude. Dr. Bowdler Sharpe's 4 volumes on "British Birds" in "Allen's Naturalist's Library," Mr. Harting's "Handbook" (Van Voorst, 7s. 6d.), Mr. Howard Saunders' "Manual" (Gurney and Jackson, 21s.), and Mr. A. G. Butler's "British Birds' Eggs," 30s., are, of course, better.

(3) It is difficult to recommend anything better than Mr. South's "Butterflies of the British Isles" (Warne, 6s.).

(4) Staveley's "British Insects" (Reeve, 14s.), is an old but good book.

(5) R. Lydekker's "Handbook to British Mammalia" (Allen), Bell's "British Reptiles" (Van Voorst, 12s), or M. C. Cooke's "Our Reptiles" (Allen, 6s.).

(6) There are no more readable scientific works than Sir Archibald Geikie's on Geology, published by Macmillan, "Primer," 1s., "Class-book," 4s. 6d., and "Text-book," 32s., which are progressive.

(7) Proctor's "New Star Atlas" (Longmans, 5s.).

You might try Collins in Great Portland Street, or Poole in Charing Cross Road. The office of the *Country-Side* will find Mr. E. K. Robinson.

S. S.—*Artemisia Abrotanum*, L., Southernwood, perhaps wild in Spain, long cultivated for its perfume and known by many popular names, such as Old Man, Lad's Love, &c., is a wormwood, a member of the Order *Compositæ*.

J. H. Crow.—The nest is probably that of the Chiff-chaff.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 202. OCTOBER, 1906. Vol. XVII.

FIELD NOTES.*

By the Rev. E. Adrian Woodruffe-Peacock, F.L.S.

AN expert field naturalist has been well defined as "one who knows how to make a note-book, and who keeps one properly and regularly." Few outdoor students, in my experience, understand the art of note-making. A keen love and enjoyment of nature is quite a different thing from an intimate knowledge of how best to catch her transient phases and characteristics, and the art of jotting them down in a few well-chosen words for future reference in notes of permanent value. This is so much the case that the great majority of past and present workers have made few notes at all, or have only discovered after many attempts and failures in note-taking some more or less useful method for themselves. In this article I shall strictly confine my remarks to field note-making. Study notes for literary work are quite another branch of the subject, and can be treated of, if required, on another occasion.

There is only one form of field note-making which I have found of any permanent value. It is easily defined and described with examples. The sheets must be capable of being arranged at once in alphabetical order under their various headings *without rewriting*. In stating this, I do not speak without fair field experience. I began making field-notes in 1870 while at the Edinburgh Academy; and only under the pressure of other and more important duties have I ever since abandoned this pleasing form of occupation. During the last thirty years I have tried every form of note-book and diary, and have finally abandoned all of them for the most simple method in which facts can be separately recorded. The advantage of the free-sheet system is that the notes can be arranged daily in regular and final order. In this way they become at once a part of a man's stock of

* Being the "best part" of a lecture on Field Observation.

information, ready for reference at any moment. During the last twelve months I have made no less than 10,000 notes on this system in the field, or in my study from old note-books; and since the first sheaf was garnered, every night has found them in up-to-date order. What is more, from being in alphabetical order, they are ever in such a form, that if 100,000 more sheets should be added to them in the next ten years, only the space required by the collection, not the order in which the sheets lie, will have to be considered.

The single-sheet method was, I believe, invented by the late H. C. Watson, of *Topographical Botany* fame. It was the one used in writing the first edition of that work; and a better could hardly have been devised. It is simplicity itself; and is as follows: A sheet of ordinary note-paper, torn twice across, gives four oblongs just under $3\frac{1}{2}$ by $4\frac{1}{2}$ inches. A sheet of scribbling or sermon paper, treated in the same way, gives a slightly smaller sheet, $3\frac{1}{4}$ by 4 inches. A still smaller cardboard cutting measure should also be ready at hand for utilising waste paper which has one clean side. This should give a sheet a little smaller, $3\frac{1}{8}$ by $3\frac{7}{8}$ inches. Why three sizes are recommended for the sheets of one collection is a matter of practical experience. In turning over many thousands of notes, a trifling variation in size renders them much more quickly handled, both when looking out for use, or when adding further sheets to the collection.

In preparing for field work, take a sheaf of about 200 sheets, stiffen the packet by a piece of thick card-board, the same size as the sheets, at the front and back. Wrap round, across the shortest way, with two yards of red tape, and link like the old-fashioned garter. Then you have ready for use the almost ideal note-book. If you never use the same-sized papers two days running, your collection of notes will have the three varying forms of sheets fairly equally distributed.

There is only one other matter—the writing. I have tried all kinds of pencils, and fountain pens, and find the Eagle Automatic indelible copying pencil the best. It is ever ready, for a touch with the first finger on the top brings the lead-like, solid ink into its proper place at once. It requires no sharpening or filling with fluid ink; and is the most handy, as well as economical means of writing I know of.

On going out for a walk the tape is simply slipped off the sheaf of papers, and relegated, for the time, to the pocket. Practically, I never use a tape binder at all, except when out for a long day's walk. When you have more than one sheaf of sheets, those not in use must be bound, to distinguish them from the working one. In the same way, when a sheaf is filled with notes, it must be bound before the next is opened. When the instruments of observation are at hand, the first note of the day should always be on some such plan as this. A dash [—] in every case means the ends of lines of writing, and brackets

[ ] the parts not fully written out. Of course, an alphabetical list of the contractions used must be kept by the worker.

8. 2. 06. *Cadney.—Bar* [ometer]. 29. 8. 25—*Ther* [mometer]. 42—[wind] *N.N.W. Strong, squally—at times bitterly cold—with snowstorms—not lying.* The date, and parish, township or hamlet where the observation was made should always be recorded. Yet all can easily be written on one sheet of any of the three sizes. Brevity is the soul of note-making, as well as of wit, if we only note all the facts.

When the first note has been placed face upwards below the rest of the sheaf and stiffener, you are ready for your next record. As you ramble along, one of the birds of sport may frequently catch the eye, and a note such as this may be the result. *Partridges—Pairs, coveys—and packed—The last means—prolonged rough weather.* By the footpath side you catch sight of a grass in flower. It is the work of a few seconds to slip the pencil into your pocket, and to pluck the grass and hold it, whilst still retaining your sheaf of papers between the thumb and first finger of the left hand. The pocket lens is as quickly upon the tiny flowers, and an examination as rapidly made. It is the footpath grass we all know so well as a common garden-weed: it is pollinating too, and so is truly in flower. It is dropped to the ground, out comes the pencil again, and down goes a note. "*Poa annua—F* [oot] *P* [ath] *S* [ide].—*Sa* [ndy] *Gl* [acial]. *Gr* [avel].—*In fl* [ower].—*C* [ommon]." It is in flower every day of the year; but only those who have full notes can prove the fact that frost alone stops it ripening its pollen.

A bullfinch comes flitting along the hedge in his brilliant spring dress, and tries the crab-apple buds, to see if their hearts—the future flowers—are yet in a fit state for consumption. You observe it all, and as soon as he has passed on the pencil is busy. *Bullfinch—Male—In full spring coat—Wild apple buds—for food—Howsham.* As you are in another hamlet now, you add its name.

Crossing a stile you notice a yellow-green object lying on the grass. It is a casting thrown up by an overfed rook. It falls to pieces at once with a touch, and a note goes down: "*Rook casting on P* [asture]—*Peas only.—Brick fragments—for grit stones.*" On your way home by the footpath, you get on to quite another soil. When your next observation comes the fact is shown. Only one of the banded land shells is likely to be abroad in February in such weather. Curiously enough, it is only found in one limited area in a wide expanse of grass fields in this locality. You detect it, as I frequently have done in frosts, and amid melting snow. Down goes a note to record the fact:—"*Helix virgata.—One sp* [ot] *only—in open P* [asture].—*Ch* [alky]. *Bo* [ulder]. *Cl* [ay].—*L* [ocally] *C* [ommon]. *Liv* [ing] *and dead.*"

As you look over the next gate you detect a stoat and hare

having what appears to be a playful encounter. It is nothing of the kind, but a grim battle of wits and struggle, meaning death to one of the apparent friends. The leveret—for it is nothing more—ever faces its adversary, and the lithe stoat gambols around trying to get behind it, for its fatal spring on the back of the head. As they drift nearer the hedge, in your anxiety to see them you unconsciously press on the gate, and the latch gives an ominous "click." The animals are both attracted, and perceive your unwanted presence at the same instant. The hare, taking advantage of the stoat's momentary pre-occupation, dashes off at full speed to the other side of the pasture, and, clearing the stream at a bound, saves its life. The stoat, meanwhile, looks after itself, and two huge leaps take it into the cover of the hedgerow. This is a difficult matter to note. Here, however, is mine: "*Stoat and Hare—S*[toat's] *antics to get behind H* [are].—*Touch gate and interrupt.*" This scribble was noted down behind the next fence, while a sharp look-out was kept on the opposite hedge into which the stoat had retired. I was not disappointed. He was soon in the open again, and as quickly picked up and followed the leveret's trail to the brookside. I followed on the other side of the fence in the next field, and kept him under observation till he reached the top of the bank. A sudden crouch to obtain better foothold, followed by a five-foot leap, and a sad tragedy of nature is told by a cock blackbird flying screeching away. On reaching the bank top, the stoat saw within reach below a pair of flirting blackbirds, which must have moved up (or down) stream in their dalliance, after the hare had passed. They would have been on the look-out had they seen the hare's wide leap. As it was, they must have been too busy with their courting to have looked out for danger from above. The hare was forgotten by the stoat, and the hen blackbird secured, on the principle that "a bird under the paws is worth a hare in the open." Here is our note: "*Stoat and Hare—Sequel. S* [toat] *returns—follows H* [are's] *track—at brook secures—blackbird leaping—down bank.*"

Such notes fulfil the purpose for which they are made. They recall to the mind the important circumstances of each observation. Years after by their aid you can recall the scene. In a morning's walk in winter there may be no more than a score of such things to note; there were about that number the day these notes were made. In the same walk in summer time, if you be a botanist, and take soil, locality, and frequency into consideration, the hand and brain would alike weary before one half of what might be observed could be noted down. All depends on the time you have at disposal for such work, and the gift for observation you possess. The gift of seeing develops with the use, especially when the exercise becomes a portion of a man's life study.

When the home is reached once again, the notes are in exactly the same order in which they were made. They are at

the same time free, *i.e.*, are not in a note-book, which requires either copying or indexing. All the sheets, except the first, want a little adding to them before they are put into alphabetical order. During your walk you changed your hamlet once and your soil twice. See that all have the date and parish added, and that every botanical and shell note has its proper soil note too. Then comes the shuffling into alphabetical order. The first note—date page as it is called—is put under "weather," and takes its place as the last in that series, while the rest are put at the end of their own subjects, if you have other notes, all in alphabetical order. We give the best advice when we say, fill them in at once, and never go to rest without putting them into their place.

When the art of stating salient facts in the fewest possible words has been mastered, the whole secret of field-note making has been grasped. If the method is systematically followed up, an unrivalled note-book, always in order and ready for consultation, will be the result. When the work has been carried on for a few years, the mass of accurate information that has been collected will be astonishing—to no one more astonishing than the busy worker who has gathered and arranged it.

NATURE IN A SICK ROOM.

FOR the last fourteen weeks I have never left this room, so have had few opportunities of studying out-door life, yet it may interest readers of NATURE NOTES to hear how wonderfully nature has befriended me, and because I could not go to her has come to me. This sanatorium stands in the centre of extensive pine woods which slope down to the Dee, while in the distance are "dark Lœhnagar" and other peaks of the Northern Grampians. The first natural history object to attract my attention was the chaffinch. A flock of at least a hundred live in the bushes below the windows, and always keep at least one eye fixed upon certain bed-room windows. The tameness of these birds is extraordinary. The instant a crust is thrown out on to the window ledge or sloping verandah roof the birds are round it in a flock, and all signs of fear vanish. They are soon into the room and hopping about the bed. I have had as many as twenty-five chaffinches in the room at a time. A few robins came, and once there was a terrible fight, the vanquished bird retiring under a bath, and remaining there quite still for an hour. Occasionally the birds perch on the hot pipes. Poor things, they get a fearful fright. Downstairs nothing can be placed on the tables until just before a meal, otherwise the butter is pecked all over. One day a gentleman, who was to have his lunch early so as to catch a

train, found a blue-tit having a grand wash in his milk, and it had no intention of leaving just because he had arrived on the scene. Sometimes the birds have to be actually pushed on one side. The robins frequently pass the night in our rooms, and I have often noticed them come in, settle down near the hot pipes, tuck their heads under their wings and sleep for hours, this during the afternoon. One morning a robin came in very early; I spoke to it quietly, and it came on to the pillow within an inch of my face. Viewed at so close a range it seemed huge, while its eyes seemed to stand "yards" out of its head. Last year a bullfinch nested on the lawn. Dozens of people fed it on its nest, and it was repeatedly photographed. Now that the snow, which was on the ground almost continuously for forty-three days, has at last gone, insect life has come into prominence. Bees fly into the room and enjoy the hyacinths and other flowers in vases, while at night moths are attracted by the electric light, and are such frequent visitors that my setting boards are quite busy. One night I got a *C. flavicornis*, the yellow horned; last night a Hebrew character, *T. gothica*. And this in April in the "cheerless north," and in the room of an invalid who is not supposed to leave his bed yet. Owls are to be heard every night. They are calling as I write this. The birds here have a grand time, truly, for they seem to have no enemies but plenty of friends, and survive the hard weather surprisingly well. Neither are they haunted by the presence of a cat, for we have none here, only seven dogs and a mongoose. I have only once seen a sparrow since I came; they are positively rare hereabouts. By far the most abundant bird is the chaffinch. Robins and blackbirds are also abundant, and I have seen several varieties of tit already. This country side is, I believe, a paradise for the botanist, and as soon as I get about again I hope to meet with that lovely little flower, the *Trientalis europæa*, which I have often found at Braemar, and in other parts of Scotland, and many other interesting plants.

R. C. Lowther,
Nordrach-on-Dee Sanatorium,
Banchory, Kincardinshire.

April, 1906.

SELBORNIANA.

Our Frontispiece.—In this number we are able to include a portrait of our much valued President, Lord Avebury, who has occupied that position since the death of Lord Tennyson in 1892, and may, we trust, retain it *ad multos annos*. This portrait is intended to be bound as a frontispiece to the year's volume.

Astronomical Notes.—A well-known astronomer has kindly promised to send us short notes on the principal celestial objects month by month, and his first contribution appears in the present number.

A Rabbit's Faithfulness.—"An incident, illustrating in a terrible fashion the cruelties of the steel trap, is reported from Leedstown (Cornwall). A trapper was going his rounds when he came upon a rabbit nursing its young while it was held securely fast in a steel trap. In order to do this it had to turn over on its side and suffer excruciating pains, as both its forelegs were broken and bleeding in the teeth of the trap."—*Daily Chronicle.*

Murderous Millinery Again.—A correspondent sends us the following letter, which appeared in the *Daily Mail* of September 14 :—

Sir, — Hearing from a well-known milliner that toques and hats made of seagulls are to be much worn this winter, I should like to inform your readers of the extreme cruelty practised on the coast of France, where the seagulls are killed in great numbers and sent over to this country.

I have stayed for several summers at Ambleteuse, near Boulogne, and was horrified at the method of killing the birds. The female is wounded, and allowed to flap about the beach for hours, uttering doleful cries to attract the male birds, who are shot as they appear. My brother, on attempting one day to put a bird out of its misery, was stopped by a man, who angrily asked him to leave it alone, as it was being used as a decoy.

Beaulieu, New Forest, Hants. Bird-Lover.

The Royal Photographic Society's Exhibition. — In previous years we have had occasion to call the attention of our readers to the excellent exhibitions of this Society; but we hardly think that any of them have equalled in variety of interest and perfection of technique the collection now on view at the New Gallery, Regent Street. Our general impression of the principal—the west—room is that a very high artistic level of selection, composition and tone has been reached. We were more especially struck by some studies of snow and a wonderful "Mid Ocean," by Mr. F. J. Mortimer. Photographs of a scientific character, it is, however, to be noted, are exhibited in the Balcony, where also are Mr. C. Welborne Piper's remarkable models of light-pencils, illustrating aberration. From Greenwich Observatory come views of last year's solar eclipse. Sir Norman Lockyer sends views of our ancient megalithic circles, which he has recently described as astronomical observatories dating back more than 2000 B.C. Dr. Tempest Anderson exhibits splendid pictures of Table Mountain, and of the falls of the Zambesi; and Dr. Vaughan Cornish a remarkable series illustrating sand-flows. Mr. Oliver Pike has four fine views of one of our few surviving Kites, and he also exhibits a large series of tricolour lantern-slides of the nests of British Birds. Messrs. J. Peat Millar, W. P. Westell and C. M. Cooper illustrate the Cuckoo; Miss E. L. Turner and Mr. W. Bickerton the Grebe; and Dr. F. Heatherley and Mr. W. Farren the Curlew. Mrs. L. J. Veley has some interesting studies of the Meerkat and the Mongoose, and Mrs. L. Birt-Baynes of the Prairie-Wolf; nor must we omit Mr. Savile-Kent's large series of fish and

other animals from Australian seas in their brilliant natural colouring. Every naturalist will find something to interest him or her. The exhibition is open until the 27th inst., and a varied set of lectures has been arranged for every Monday, Thursday and Saturday evening.

Manchester Microscopical Society's Lectures. — We have been asked to call attention to a list of lectures which the members of this Society are prepared to deliver before Natural History Societies. It includes seventeen lecturers and upwards of fifty subjects, and can be obtained from the Honorary Secretary, F. B. Cocker, 22, Filey Road, Fallowfield, Manchester.

LETTERS TO THE EDITOR.

The Need for Nature Knowledge.

A West End shop has undertaken the agency for some specially mounted butterflies, of which a selection is now displayed in the window. A relation of mine was present the other day when a schoolboy came in and said he would very much like to know whether the poisonous butterfly exhibited "bit" or "stung." There seemed to be considerable doubt on the part of those in charge as to which was the case, but the answer given was that they thought that it bit. It was not until after the schoolboy had departed that it was suggested by my relative that the butterfly was poisonous when it was eaten, as it was one of those brightly-coloured insects which serve as the models in the well-known cases of mimicry, and advertise the fact that they are nauseous by their gaudiness.

Wilfred Mark Webb.

Odstock, Hanwell, W.

NATURAL HISTORY NOTES.

407. Animals and Plants in this Hot Weather.—The spell of hot weather has caused some remarkable results. Many birds have been driven away, from lack of insect food. Thrushes, starlings and tits have disappeared; and as sparrows are in the cornfields, the sound of a bird during the daytime is rarely heard. Blackbirds, however, have made themselves unusually objectionable. So hard were they driven for food that they attacked everything in the shape of fruit long before it was ripe. They ate my plums when as hard as bullets; until in desperation I picked them before they turned colour. Apples they served just the same. With the exception of two or three kinds of flies, which amount almost to a plague, the absence of insects in the daytime is very pronounced. Even the worst of all British insect pests, the aphis, appears to be starved cut, owing to the plants being too dried up to afford it means of sustenance. Snails are harder to find than in the depth of winter. Many trees and shrubs, notably

elms, hawthorn, plum trees, laburnum, and *Pyrus japonica*, are shedding their leaves weeks before the usual time. Never before have I seen wall fruit so injured by the sun. Peaches have a part, the size of a five shilling piece, so roasted that the crop is nearly spoiled. Pears on the walls are almost, if not quite, as bad. Vegetables in general, that could not be watered, are unfit for the table; and many flower gardens are a sorry sight. As to the root crops in the fields, I fear to think what will become of them unless rain comes at once to the rescue. They are terribly mildewed, and have become tough, and almost as hard as wood. Water plants, however, flourish. The vegetation in the decoy below my house is more dense and luxuriant than I have ever known it.

Southacre, Swaffham, EDMUND THOS. DAUBENY.
September, 1906.

408. Robins Killing their Parents.—Miss Hagen, in Query No. 88, asks whether the "popular belief that Robins kill their parents in the autumn" has any foundation in fact. This was touched upon in NATURE NOTES a few years ago, when I stated it to be groundless, as far as my observation went. It is quite contrary to what one would expect. I have at times seen old robins drive young ones about my garden. In one notable instance, a young bird that used to settle on my knee was violently attacked by an old bird whenever it went near a particular spot, and had to flee for its very life. Young birds of the year, besides being less powerful than their parents, are not practised in attack like older ones. They have to pass through the ordeal of fighting for a mate before acquiring full pugilistic powers; and the longer they live the more they have to fight in the struggle for existence. In the spring, birds fight in rivalry with other males. In summer they fight for their homes and their young. In the autumn they fight for the possession of some favourite spot, and it is at this time that old birds drive young ones from their company. In winter they fight for food. Most birds have some particular haunt and regular beat. Robins take to a certain part of our garden, and resent the intrusion of other robins. Kingfishers keep to one stretch of the river, and respect other kingfishers' water. As regularly as clockwork in the evening owls fly past my house, and hoot in the same stopping places on their journey to their feeding-grounds. Remarks such as these hold good in the case of many other birds with which I come in contact almost every day

Very few of our common birds live long enough to become enfeebled by age, the odds against their living to old age being so very great. To give a rough idea of the mortality among little birds, let me say that most pairs produce four young ones in the year—some a good many more. As their numbers remain the same, taking one year with another, it follows that if a hundred birds inhabit my premises, two hundred that belong to these premises, or were born here, must die during the year.

EDMUND THOS. DAUBENY.

409. Shakespeare's Treatment of Nature.—In reading the part of Edgar in "King Lear" a short time ago, it occurred to me that the exclamation "do de, do de!" in one of his mad speeches (Act III, Scene 4) might be intended as an imitation of the song of the Thrush. His speeches are full of allusions to living creatures.

New Milton. J. E. KELSALL.

410. A London Bird Visitor.—About dusk on September 5, a Kestrel sailed over Clapham Common at no great height. It seemed a littte bewildered, and may, perhaps, have been an escaped bird; or it may have lost its way. Would the bats, which are numerous thereabout, cause the bird to swoop down? The bird attracted little notice, though someone behind me said, "What is that? It is not a pigeon."

Battersea. WALTER JOHNSON.

411. The Baker's Jackdaw.—At Wokingham, according to *Feathered Life*, there is a jackdaw which has acquired so much intelligence as to accompany its master, a baker, on his delivery rounds. Occasionally the bird flies to a house or tree-top, and regains the cart by a long swoop as the horse trots along the road. The jackdaw and its master are said to be on the best of terms, and

a whistle from the baker brings the bird back to the cart from a considerable distance, and invariably he returns to his master with a caw of satisfacton.

37, *Alwyne Villas, Canonbury, N.* CHAS. E. J. HANNETT.
September 5.

412. An Egret Rookery.—"A long sail up a series of narrow, tortuous creeks, between walls of impassable mud, and through immense salt marshes, found us anchored at the desired locality. Even before the anchor took the mud, late in the afternoon, I had seen the sun glance on the dazzling whiteness of several dozen of egrets as they flew to and from the marsh, immaculate amid the southern mud, which sticks like glue. After one false start, we found a man who knew the location of the rookery, in a great cypress swamp. First we tramped a mile over a woodland trail, when we came to an arm of muddy water under high, over-arching trees, and a small, flat-bottomed skiff. Working two paddles we glided along, and soon emerged in a great area of cypress trees growing out of the water. Alligators and turtles splashed before us, and buzzards and ospreys wheeled overhead. From the cypress branches, with their delicate needle-foliage of pale green, hung the streaming grey moss. Pairs of wood-duck started up now and then from the water with resounding wing-beats. . . . First we met, as we continued to navigate this cypress sea, scattered nests, with eggs, of the Yellow-Crowned Night-Heron. Then we began to meet individuals of the familiar Black-Crowned Night-Heron of the North, also breeding, and soon emerged into a more open area, where the trees grew more sparsely and not so tall. At every rod of progress dozens and scores of egrets, and the smaller, dark-coloured little Blue Heron, with numbers of the bluish but white-breasted Louisiana Heron, kept springing into the air. Then, as the abundance began to lessen, we returned to the heart of the rookery to spend the day. It was a wonderful sight, well worth travelling far to see. Upon any sudden noise, hundreds of these different herons would spring from trees everywhere about. Then they would return, and alight upon the tree-tops, the delicate snow-white plumes from the backs of the egrets straying out bewitchingly in the breeze. Nearly all day long we paddled about the lacustrine forest, and I revelled in the sights and sounds of this wonderful place, which is probably the largest and perhaps the only egret rookery in North America. The only reason that it exists to-day is because it is guarded by armed wardens who will arrest or, if necessary, shoot any person found upon the property with a gun."—"Country Life in America," by H. K. JOB.

413. Nature Jottings from Tasmania.—In Mr. Holte Macpherson's interesting notes on London Birds for 1905, occurs the following passage: "throughout the summer Swifts may be seen in town every now and then, usually in rough and stormy weather; there were a few flying over the Round Pond on the evening of June 7, and on the twenty-sixth of that month I saw several flying very high over West Kensington." The Swift which visits Tasmania during the summer months is the "Spine-tailed (*Chætura caudacuta* Lath.): it breeds in Japan, and afterwards is not seen here until February, when the summer is well advanced, although I have occasionally noticed it earlier. It has the same habit which is noticed by Mr. Macpherson in the British species, of suddenly making its appearance in the proximity of cyclonic disturbances, but with our bird it is usually when the sky is clearing at the tail-end, so to speak, of the disturbance that the Spine-tail is seen, towards evening, high up in the heavens. It would be interesting to know what explanations could be offered of this trait, which is an established custom of the Chætura, and not a mere accidental occurrence. Can it be that the birds are following up a current of warm vaporous air, thronged with insect life, at that altitude? The Chætura has a strong predilection for winged ants as sustenance: and as these insects usually begin to swarm during moist weather in February, and continue through March and part of April, there seems to be a distinct connection between the swarming period and the visit of the Swifts, these being the very months when the birds are most in evidence. It is possible that numbers of these flying ants may he borne aloft by strong air-currents accompanying the disturbance, and that the birds follow them at a high attitude and feed upon them at their leisure.

W. Devonport, Tasmania. H. STUART DOVE.
July 23, 1906.

414. Can Swifts take Wing from the Ground.—The letter from W. S. Cleather in your August issue seems to me to correctly sum up the question of Swifts taking wing from the ground. I, too, like Mr. Cleather, proved by actual experiment years ago that they could rise from a level surface, and I have noticed that none of those who mention a case of a Swift being found which required to be thrown into the air, add that they actually saw it come to the ground. I have seen this: only a few months ago I saw a Starling and a Swift fighting. When they finally came to grips they fell from the eaves of a high house on to the lawn below. The Starling at once darted off, and the Swift followed more slowly. I was not surprised at this; I was only astonished after hearing the thud when they struck the ground that either of them had any breath left in their bodies. Some years ago I saw a pair of starlings fighting for possession of a dovecote, and they came to the ground in the same way, both of them being so stunned that I captured the pair, yet this did not lead me to conclude that starlings could not rise from a level surface any more than I should be likely to say that human beings could not get up again after I had seen a stout person step on a banana skin and sit down suddenly. In this case as in so many others, it all depends upon circumstances.

Worksop, September, 1906. J. T. HOUGHTON.

415. Pythons.—I was looking for some comments in the current issue on the letter No. 385 which appeared in your August number. In his letter Mr. Daubeny says: "Pythons do not attack such large animals as tigers, and could not swallow them if they did." Unfortunately, I have never had the pleasure of meeting a python in his native home, hence I cannot speak with any authority on the point, but I should like to ask Mr. Daubeny if this statement is based upon his own observations or is taken from hooks. Briefly put, my reason is this: By a strange coincidence another magazine published at the same time as yours (the *Wide World*, for August) contained an article entitled "Three in a tree," by the Rev. E. C. Wilson, late Church of England missionary in Ceylon. It was accompanied by a sworn statement by him as to its accuracy, and described how a tiger followed him into a tree and was in its turn attacked and partly swallowed by a large python. When matters had reached this stage he says he descended from the tree and shot the reptile, cut off from the half-swallowed tiger one of the claws, and a photo is given of this trophy attached to a watch-chain. The words in the article describing the attack are "a dreadful-looking python darted down . . . coiled round its neck." I cannot make this statement agree with the one in Mr. Daubeny's letter, and as a Nature-student should like to know which to accept as correct.

Worksop, September, 1906. J. T. HOUGHTON.

416. The Conger's Revenge.—Having cut up a large conger which he had just caught for the purpose of bait for his lobster pots, a Port Isaac (Cornwall) fisherman seized the eel's head some twenty minutes afterwards to throw into the sea. To his surprise the jaws opened, and the fish's sharp teeth closed on his forefinger, badly lacerating it. The fisherman has now to carry his arm in a sling.—*Daily Chronicle.*

417. A Spider and a Fly.—One morning, when busy in my workshop, a large fly, double the size of a bluebottle, was caught in a spider's web in the window close to where I was at work, and gave me a grand opportunity of watching a long and severe struggle. The fly was held by two of its legs only; and for some time the spider, which was about the size of the fly's head, proceeded to strengthen its hold by attaching numerous extra lines to the two captive limbs, carefully keeping out of reach of the others which were letting out in all directions in frantic efforts to escape. During a short respite in the captive's struggles the spider cautiously approached, and with its hind legs got several turns of its tiny rope round one of the limbs that was free. These tactics were carried on till all the legs were firmly bound. It then fastened its jaws in one of the lower joints of the fly's legs, and retired for a few minutes to its den to rest, and allow the poison injected into the wound to do its work. This soon showed itself; for its deadening effects reduced the victim's struggles in a

marked degree. Shortly after a second bite resistance ceased ; and the victor settled down to suck the juices of its fallen prey. The struggles lasted quite an hour. This small spider dragged, with apparent ease, from the middle of the window pane to the mouth of its den, an insect ten times its own size. The poison of a spider paralyses, but does not kill. Next morning the fly was alive, and the spider was still sucking out its life blood.

EDMUND THOS. DAUBENY.

418.—**Leaf-cutting Bees.**—The Bee mentioned by your correspondent belongs to the family of Upholsterer bees—*Megachile centuncularis*. This summer having been unusually warm, has caused these and, indeed, many other species of insects, to have been more common than for many years past. Although the leaf of the rose seems to be most preferred—hence its common name of the "Rose-cutter"—yet leaves of beech, birch, pear, apple, and others with smooth surfaces and serrated edges, are also chosen by these bees in the construction of their dwellings. It is interesting to watch this industrious little bee working away during a hot summer's day. Settling upon the edge of the leaf she commences with her mandibles to cut out with the greatest accuracy and neatness a circular piece, even with more quickness than it takes to explain. When the piece of leaf is nearly cut through, and so as to prevent any accident which might injure the shape of the leaf, she poises—like a humming-bird over a flower—and so completes the incision. With the piece cut out, she flies straight away to her nest, a cylindrical hole she has made, or appropriated, in the cavity of a stump of a tree, or post—I have found the nest in an old stone wall. Then, without gum or any sticking solution whatever, she folds one piece over the other, until the leaf tapestry is built up of layers to about an inch. On this she lays an egg, and then, diligently pursuing her work with the most perfect mathematical skill, goes on to build another course, repeating the same process, laying an egg at equal distances until the number of courses are all completed.

41, *Heath Street, Hampstead, N.W.*, J. E. W.
September 8, 1906.

419. Lena Shaw will probably have observed that the pieces cut from the leaves are roughly of two distinct shapes, circular and oblong. The bee uses them to line a tunnel, which she has found or made in a dry stick, the oblong ones forming the sides of the cells she makes, and the circular ones the divisions between them. In each cell is placed one egg and the necessary food for the young grub (larva) to feed on when it is hatched. This food is just sufficient to last it till it becomes a pupa. It is one of the most remarkable facts in nature that the last cell made always produces its bee first, then the next, and so on, thus making the way clear for the first one's occupant, far inside the stick, to escape. The name of the bee is probably *Megachile centuncularis*, but there are several species of leaf-cutting bees, and they all cut the leaves themselves, roses being the plants more especially favoured.

Hale End, Chingford. C. NICHOLSON.

420. In reference to the question asked by "Lena Shaw" in the September No. of NATURE NOTES, I have frequently observed the procedure of Leaf-cutter Bees in my own garden to be as follows : The bee settles upon the margin of the selected leaf and rests with three feet on the upper and three on the under side, and then turning its body from left to right cuts out as large a portion of the circle as it can reach forward to describe, falling when the cut is completed with the detached piece of leaf still grasped between its feet, but without touching the ground if the intervening distance is sufficient to enable it to recover its balance, in which case it flies away direct to its nest. If it touches the ground, the piece of leaf generally has to be dropped for a moment and re-adjusted in position for carrying away. Two species of bee have been specially noticed, one of which cuts the green leaves of rose trees, whilst the other takes portions of the petals of scarlet pelargoniums.

Ealing, W. R. T. LEWIS.

421. **Peacock Butterflies.**—I have often noticed the clicking noise produced by these butterflies, and, as it seems to be heard only when they are fanning

their wings strongly, during which the tips of the latter are considerably depressed below the level of the thorax, I always thought it due to the rasping of the wing-rays on the under surface of the upper wings against those on the upper side of the lower wings. In all the butterflies of the Vanessid group the wing-rays in question are very strong and prominent, and I fancy I have noticed the same phenomenon in other species of the group. It will be observed that when the wings are depressed deeply the anterior or upper pair are brought forward till there is a decided gap between them and the posterior pair, extending almost to the body. I see no reason to think that this sound serves any useful purpose in the insect's economy, unless it be in the nature of a scare; for the butterfly will sometimes open and depress the wings suddenly on the approach of the collector, and the act might serve to intimidate small birds approaching with designs on the butterfly's life. The conspicuous "eyes" on the wings would add to the effect by their sudden appearance. I have heard the common Tiger Moth (*Chelonia caia*) make a somewhat similar noise when disturbed, and at the same time display the crimson "collar" round its neck and exude a drop of yellow liquid on each side of the thorax. C. NICHOLSON.

422. Insects and Floral Imitations.—I fear Knuth, as quoted by G. Henslow (400), was quite wrong in his notion as to the sight of insects. Butterflies and moths are most easily deceived by even clumsy imitations of objects with which they are familiar. I have seen a specimen of the Silver-washed Fritillary (*Argynnis paphia*) stop in his powerful and rapid flight to inspect a dead leaf resting on a frond of bracken, obviously because the dead leaf bore a superficial resemblance to that of the females of his species. It was some time before he could "make up his mind" that it was *not* so. Also, I have read of a Hummingbird Hawk-Moth (*Macroglassa stellatarum*) which flew into a room and visited most of the flowers on the wall-paper, which happened to be of an unusually realistic pattern. The fact is, that insects have a broad perception of light and shade, a general idea of colour, and a strong sense of smell, but their notions of form and distance are quite at sea, because the latter are of little account to them, while the former are all-important. C. NICHOLSON.

423. Hearing in Insects.—The answer to Peter Hastie's query is that snails do not squeal when trodden on. The noise is simply due to the emission of air producing a series of minute bubbles, the rapid bursting of which produces the sound in question. I have not witnessed the painful process of boiling live lobsters, but suspect the cause of their "squeal" is similar. If they were absolutely *plunged* into fiercely *boiling* water, however, I should think death would be practically instantaneous, and so preclude any squeals. C. NICHOLSON.

424. Ants.—The only way to effectually get rid of these insects is to find the nest and destroy it and all its inhabitants by pouring on boiling water, paraffin, a strong decoction of elder leaves or weak carbolic acid. If, however, the nest cannot be found, or conveniently got at, soak pieces of sponge in strong sugar-water or honey and lay them about where the ants are usually most noticeable. They will be attracted to the sweets, and when the sponges are well covered with ants, they can be dropped into boiling water, and then rebaited. This is a slow process, but perseverance will bring its usual reward.

C. NICHOLSON.

425. Clover Growing in Circles.—Was the grass mixture sown broadcast? If so, the clover seed being heavier than the grass might be distributed in circular rings as the sower turned round in scattering the seed. The querist does not say whether the rings are impartially distributed over the lawn: if they are more or less confined to one part, it would suggest that the seed sorted itself in the bag before being sown. C. NICHOLSON.

426. Plants on the Chalk.—I was much interested in "Plants on the Chalk," No. 389, August, 1906. Last summer I climbed an iron-furnace refuse-hill, some acres in extent, near here. I found it covered with Viper's Bugloss, although it is not found anywhere else in this locality.

5, *Fairy Hill Road, Kilmarnock.* WM. BIRRELL.
August 15, 1906.

427. **Alien Plants.**—About two months ago, while walking on the sand-hills at Birkdale, I noticed a plant growing there which I had not seen before. The plant resembled a forget-me-not, but the flower was of a bright orange-colour. The plant was pressed and sent to the Natural History Department at the British Museum, where it was discovered to be a native of the south of North America and the north of South America. They say the seed has probably come to England in ballast. The name of the plant is *Amsinckia lycopsoides*, and it was growing among large plants of Ragwort, Viper's Bugloss, and Henbane. Near the same place I noticed a huge thistle with very beautiful flowers, which, I am told, is also a foreigner.

17, *Crescent Road, Birkdale, Lancashire, August* 5, 1906. FLORENCE HOOTON.

[The *Amsinckia*, a native of California, is stated in Mr. Dunn's "Alien Flora," to be "a grain introduction and . . a wool-waste plant."—ED., *N.N.*]

428. **The Eared Elm of Hampstead.**—Owing to its dangerous condition, the famous old elm tree on the Spaniard's Road side of Heath House, the residence of Lord Iveagh, was removed on September 10. Sir Samuel Wilks, Bart., writes to the *Hampstead Express:* "This well-known tree has been decaying for some time past, and for the last three years it has been absolutely dead. On last Monday morning it was pulled down by a rope, as it was on the brink of falling, having crumbled into dust at its roots, and with an interior so soft that it could be scooped out with the hand. Whether this rottenness was due simply to decay from age, or whether it was mainly due to a fungus growth, was not very evident from a superficial examination. The great feature of the tree was the large protuberance or excrescence, which somewhat resembled the human ear, and which appeared to be three or four feet in diameter. This protuberance consisted of a mass of bark formed in concentric layers, which lay over one another, each of which was about one-third of an inch thick. Being attached to the tree somewhat like the human ear to the face, this auricle of bark was composed of about a hundred semicircles. It looked at first glance as if these rings corresponded with what might have been seen in a transverse sectional view of the stem, or, in other words, as if the substance of the tree with its rings had been thrust outwards. This, of course, was found not to be the case, although probably the layers of bark were formed synchronously with those in the wood. Two years ago I requested my granddaughter to take a photo of it, and in this it will easily be seen that the protuberance is divided into about a hundred semicircles. This picture I showed to Prof. Boulger, of the Royal Agricultural College, who, I believe, had previously seen the tree, and he offered his opinion that the excrescence was the site of a lost limb which happened many years ago. The bark had grown over it year by year to heal the wound, so that instead of, as is usually the case, the annual growth of bark formed by the cambium uniting with the older growths to form a thick and irregular covering of bark to the tree, there arose every year a new layer, followed by another, which stretched over it, until a hundred of these at least had been formed. The old original wound had been thus covered and the present size of the excrescence reached. Prof. Boulger thinks that then or subsequently the tree became pervaded by a fungus or other parasitic growth; that this caused its death some years ago, and at last changed all the tissues into a pulpy mass, so that it could stand upright no longer. Looking at this stuff through a lens, some remains of a fibrous tissue may apparently be seen, and amongst them rows of transparent globules, but whether these are sporules or not I cannot decide. I could see no living mycelium, but a number of threads which were probably the remains of them."

To this, Mr. James Whiting, the well-known secretary of our Hampstead Branch, adds: "Its decay I am disposed to assign partly to the smoke of London, which these trees cannot endure, but more especially to the gas leakage, however small it may be, which permeates through the ground from the pipes running alongside the road. About the time I noticed its health beginning to be impaired, when its leaves grew smaller with each succeeding year, the larvæ of the goat-moth—*Cossus ligniperda*—took possession of this once stately tree. Every summer for the last ten or twelve years numbers of the destructive caterpillars of those insects have been observed escaping from the trunk, hurrying

away after their work of devastation, previous to hiding themselves to complete their transformation into the chrysalis state. Now that the tree is down there is full evidence of the destructive work of these caterpillars, which have, during the remaining years of the tree's life, considerably helped to hasten its death. In all directions of the old dead trunk and branches, can be seen the multitudinous tunnels of these wood-borers."

NATURAL HISTORY QUERIES.

95. Eggs of Ducks and Geese.—Can any one explain the following? Four eggs of a duck and four of a goose were kept in a gentleman's gun room of ordinary temperature for a fortnight. Then they were put in an incubator for fourteen days and under a hen for three days. At the end of this time two eggs of the duck and three of the goose were hatched.

Southacre, Swaffham, EDMUND THOS. DAUBENY.
September, 1906.

96. Vanished Grasshoppers. — In my childhood's days I well remember how cheery the summer air used to be with the incessant "chirp" of grasshoppers, and how one could scarcely rest a minute upon a meadow-bank without being more or less surrounded by these little creatures. *Now I never see one.* What can be the reason for this total disappearance? Is it universal, or confined only to Mid-Hants?

Ropley. MARIE S. HAGEN.

97. Alien Plants.—I am informed that the little Swiss and Italian flower *Erinus alpinus* came up abundantly at Chesters, Northumberland, after the excavations which were made in the Roman remains at that place some thirty or forty years ago. The theory then was, that the seed had been lying dormant ever since the Roman occupation, waiting for an opportunity to germinate, which at length was given it by the pick and spade of the modern antiquary. Can you tell me whether the *Erinus* seed would be likely to retain its vitality for so long a period?

According to "Bentham and Hooker's British Flora," *Erinus alpinus* is established as an escape from gardens on the Roman wall on the borders of Yorkshire and Lancashire, and a relation of mine found it a few years ago on the walls of Berkeley Castle, in Gloucester. Bentham and Hooker also term *Astrantia major*, Linn., a garden escape, but its only habitat in England is not far from the site of a Roman villa, and close to the quarry from which its building material was taken, and, if it be the fact that such plants as the *Erinus* and *Astrantia* are not found except in proximity to Roman remains, why should they not be described as *Colonists* rather than as *garden escapes?*

Walton-on-the-Hill, Surrey, M. J. TEESDALE.
August 17, 1906.

[I do not know of any tests of the duration of germinating power in the seeds of *Erinus*. Both *Erinus* and *Astrantia* have long been cultivated in English gardens, and occur as escapes in places having nothing to do with the Romans. ED. *N.N.*]

ASTRONOMICAL NOTES FOR OCTOBER, 1906.

THE beautiful planet *Venus* sets about an hour after the sun, and may possibly be observed very low in W.S.W. soon after sunset.

Mars rises three hours before the sun at middle of October, and will be situated in E. region of Leo. The red light of this planet may be discerned at about 5 a.m. in the E. sky.

Jupiter rises at 9 p.m. at middle of October, and will be a brilliant object

during the remainder of the night, shining with a pale yellow lustre amongst the stars of Gemini. He will be near the moon on the night following October 9.

Saturn is favourably visible in the evening hours in Aquarius. At the middle of October this planet will be due south, altitude 28°, soon after 9 p.m. He will be near the moon on October 27.

W. F. D.

REVIEWS AND EXCHANGES.

Field-Path Rambles : Round Croydon : New Edition, price 6d. net. ; *Round West Malling and over the Kentish Hills*, price 1s. net. ; *Seaford and Lewes series*, part 1, price 1s. net. ; and *New Ramble Routes in Kent and Surrey*, price 6d. net. By Walker Miles. R. E. Taylor and Son.

Our attitude towards this excellent series is always that of Oliver Twist in the workhouse ; we want more. We rejoice to see that a new edition of the Croydon volume has been called for, and that the railway companies are so far awakened to the importance of the rambler as to afford him facilities for returning from a station other than that to which he books. The West Malling volume contains a welcome departure in the form of a brief prefatory description of the place, and the baldness of the itinerary is relieved by some reference to the quintain at Offham and to St. Leonard's Tower, while there are no less than seven illustrations of the Abbey. The two other volumes just issued comprise new ground or new routes over a familiar area ; but what has Essex done that it should be neglected, and are there no field-paths in the valley of the Chess, among the Chilterns, or round Aylesbury ? We want more.

Think ! By Alwyn K. Noys. Elliot Stock. Price 1s. 6d. net.

This silly booklet is admirably printed and bound. It seems intended to be a protest against vivisection, and a suggestion of a future state for all animals as compensation for the endurance of pain in this life. Containing some twenty small pages of disjointed monologue, it is dear at the price.

British Grassses ; 23 interesting species popularly and botanically named. 12 cards. The Country Press. Price 1s.

Until more species have been illustrated in the same way, of which the enterprising publishers hold out hopes, we are not sure that these little drawings and none too distinct dissections will suffice to enable the tyro to name common species which he comes across. They are, however, well printed, habitats and dates of flowering are given, and, *mirabile dictu*, the scientific names are correctly spelt.

A List of the Fungi of the New Forest. By J. F. Rayner. H. M. Gilbert and Son. Southampton. Price 1s. net.

This carefully compiled list, drawn up for the New Forest Natural History Society and the Bournemouth Society of Natural Science, as a result of numerous forays during the last twenty years, enumerates some 570 species from the 92,000 acres of the New Forest, as against over 600 species recorded from the 5,5000 acres of Epping Forest. As the conditions of the Hampshire woodland are more varied than those of Essex, this must, we think, be merely the result of a search still demanding greater intensity. Localities are given for the less common species : some Mycetozoa, but only two Uredines, are included ; and there are illustrations of *Geaster hygrometricus*, *Mutinus caninus*, *Crepidotus epibryus* and *Sparassis crispa*. It is proposed to issue a supplementary list every December. Cannot workers be found to complete a cryptogamic companion to the late Mr. Townsend's *Flora of Hampshire ?* Meanwhile, this a valuable contribution to that end.

Check List of the Vertebrates of Ontario. Department of Education, Toronto. No price stated.

The later pages of this pamphlet, those enumerating the mammals of the province, are headed "Check List of the Animals of Ontario," and, though it is true that "Batrachians, Reptiles, Mammals," appears in large type on the

wrapper and title-page, there is no other intimation of the absence of all mention of birds or fish. The classes, orders and some families are characterised in simple language, popular names are given and there are brief and distinctly educational notes on many species. As presumably the publication is intended for an educational rather than a purely scientific purpose, no authorities are added to the scientific names. We hope the Department will arrange for the preparation of coloured wall diagrams or lantern slides of the chief genera for use in the schools of the province.

The University of Colorado Studies. Vol. III., Nos. 2 and 3, March and July, 1906. Boulder, Colorado. Price 50 cents each.

Among the contents of these two numbers the papers most akin to our studies are one on "The Seed and Seedling of the Mountain Globe-Flower" (*Trollius albiflorus*) by Dr. F. Ramaley, describing the connate petioles of the cotyledons; and one on "The Cranial Nerves of one of the Salamanders," by G. S. Dodds, in No. 2; one on "Trycorythus, a genus of Mayflies," by T. D. A. Cockerell, and one on "Lucretius and Haeckel before the Riddles of the Universe," by Professor Hellems, in No. 3.

The Naturalist for September is a special British Association number issued at a shilling, and well worth the price. It is illustrated with portraits of several Presidents of Sections, and contains summaries of the proceedings of the zoologists, anthropologists and botanists at the York meeting, together with abstracts of many papers read which have reference to the North of England.

Received: *Board of Agriculture and Fisheries' Leaflets—No.* 161, *The Vapourer Moth; No.* 165, *Gall-gnats Injurious to Willows and Osiers; No.* 166, *Some Common Thistles; No.* 171, *Violet Root-rot;* and *No.* 172, *Bare Fallows; Our Animal Friends* for March; *The Plant World* for July; *The Victorian Naturalist* and *Bird-Lore* for July and August; *The Museum Gazette* and *The Estate Magazine* for August and September; and *The Irish Naturalist, The Animal World, The Animals' Friend, The Humanitarian,* and *The Agricultural Economist* for September.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

Central Society—The following members were elected at the Council Meeting held on September 25:—Miss Maude Maxwell-Witham; S. P. Stephens, Esq.,; Hugh Boyd Watt, Esq., M.B.O.U.

Hammersmith and Fulham Branch.—Charles Pretty, Esq.; R. Burman Rosevear, Esq., F.M.S.

Library.—The Honorary Librarian has pleasure in announcing the following additions to the Library: "Life and Letters of Gilbert White," by Rashleigh Holt-White, 2 vols. (1901); "Natural History and Antiquities of Selborne," by Gilbert White (Professor Bell's edition), 2 vols. (1877)—both bought by the Society; "Animal Heroes," by Ernest Thompson Seton (1906); "Country Rambles round Birmingham," by Edgar Brooks (no date); "From Paleolith to Motor Car," by Harry Lowerison (1906); "School Gardening for Little Children," by Lucy R. Latter (1906); "Our School out of Doors," by Hon. Cordelia Leigh (1906)—kindly presented by the Editor. The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evenings of October 15 and November 19, for the purposes of issuing books to members.

EXCURSIONS.

Saturday, August 11.—Mr. B. T. Lowne conducted a party of ten Selbornians from Hayes station to Downe. The way lay across Hayes Common, where Goldenrod, Ling, and Heather were in full bloom: a turn to the left along a footpath led to the Keston bog, above which is situated the Keston lakes and

Cæsar's well or pool. The latter was probably the only water supply to the great prehistoric camp, which is now enclosed in the private portion of Holwood Park. A short walk along the common brought the party to the little swing gate, known as "Scotland Stile" (the entrance to the public footpath across Holwood Park). Much interest was taken in a twin oak and yew tree which grow so close that they appear to form one trunk; and, but for the difference of bark, it would be almost impossible to tell which part belonged to which. The "Wilberforce Oak" was also inspected, it being, according to an inscription on the stone seat near by, which is an extract from the diary of Wilberforce, the identical tree under which he determined to abolish the slave trade. The rest of the walk to Downe was across glorious undulating fields known locally as the "Green Hills," thickly dotted with fragrant Marjoram, Thyme and other members of the Chalk flora. Unfortunately, time did not permit the party to view the house, greenhouses and gardens where the illustrious Charles Darwin lived and worked so many years, as they are some distance from the route; so, after a refreshing tea at the "Queen's Head," all returned to Hayes by the lanes.

Saturday, August 18.—The very unsettled weather, and the holiday season, doubtless accounted for the sparse attendance at this ramble, six Selbornians only meeting the guide, Mr. W. Percival Westell, F.R.H.S., M.B.O.U., at Bricket Wood. Bricket Wood is the rendezvous during the summer of thousands of children, who gather to enjoy their annual "treat," but the little hamlet is more interesting to nature-lovers because it is a splendid botanical and entomological district. The party at once started for Munden, the seat of the Hon. A. Holland Hibbert, where they were kindly conducted by Mr. Ruse, the gardener, through the gardens and grounds. The view from the terrace, with the river Colne in the valley, was greatly admired. Two trees in the grounds call for mention, a fine specimen of *Catalpa bignonioides*, which was in flower, and *Nyssa sylvatica*. The latter is a very rare tree in this country, and is a native of the United States. The flower is very insignificant and the chief characteristic seems to be the beautiful tints of the leaves in the autumn. It is related to the English Dogwood. The tree at Munden did not increase very much for the first forty years after being planted, but now grows freely. The grass-walk, over-arched with Beech and various coniferous trees, was delightful, and the grateful shade cool and refreshing. Aldenham Abbey next came into view, and the exquisite red, yellow and white water-lilies were a feast of splendour. The spotted trout, the cheery Autumn song of a robin, and the antics in mid-air of a Spotted Fly-catcher did not escape attention. Reaching Aldenham Village, the party paid a visit before tea to the Church of St. John the Baptist. The tomb from out of which some Sycamore trees grow was duly pointed out, and those who ascended the tower were amply repaid by the magnificent view of the surrounding country. The Church is said to rest on the foundation of an earlier Saxon building, and it is probable that there has existed a Church here for over one thousand years. The earliest portion of the present building is, however, not more than 700 years old. This is the little Norman window at the west end of the south aisle. About 1250 A.D., the Church was largely rebuilt, and the beautiful Purbeck Marble Font, the Tower windows on either side of it, and the two western arches on the south side of the Chancel, probably date from that period. Visitors cannot fail to notice the difference in height and in their capitals of the pillars of the two sides of the nave, those on the south being at least one hundred years older than those on the north. The Nave roof is a very beautiful example of fifteenth-century work, pictures of the decoration on which may be seen in South Kensington Museum. The most beautiful monuments in the Church are the recumbent effigies of the wife and daughter-in-law of William Crowmer, Lord Mayor of London in 1413 and 1423. The Church is very rich in memorial brasses of the fifteenth and sixteenth centuries, and a little Jacobean figure of Mrs. Katherine Cade, who died in 1650, is well worth examination. The Tower was probably built in the thirteenth century, and some large specimens of Hertfordshire Puddingstone have been used in building the buttresses. After tea at "The Chequers" the party wandered along the lanes, and then descending the valley again reached the River Colne, leaving that river again where it joins the Ver. The joint stream is known as the Colne, which the writer thinks is a slight upon the Ver! Bricket Wood Station was reached in good time for the train back to town.

Saturday, August 25.—On this day a small party assembled at Byfleet Station on the South Western Railway, and took an enjoyable walk to Wisley to see the Gardens of the Royal Horticultural Society. These were originally laid out by the late Mr. G. F. Wilson, and after his death they were purchased and presented to the Royal Horticultural Society by Sir Thomas Hanbury. Though the best time for seeing the Gardens is earlier in the year, there was much of interest to look at, and it was easy to imagine the additional beauty that a wealth of Spring flowers would give to the slopes and pond sides. Mr. Fitzwater led the party across the fields to the Gardens; and, in the absence of the Superintendent, one of the head gardeners was kind enough to show the party round. It was mentioned that all birds are protected, and some of the nesting-boxes originally put up by Mr. Wilson were still to be seen. Thanks are due to the Rev. W. Wilks, Secretary of the Royal Horticultural Society, for the kind permission to visit Wisley.

Saturday, September 1.—A small party of Selbornians met at Tattenham Corner Station and had a beautiful ramble under the leadership of Miss Giberne, over Epsom Downs and up to Walton Heath. The day was somewhat hot for walking, and the route taken was not so shady as could be wished. Just before reaching Walton a much needed halt was called, and the party rested under some shady trees. The distance was misty, and the hills above Oxshott were only faintly seen. On reaching the village of Walton the party proceeded across the heath to Tadworth, and, after tea at the hotel there, spent a short time on the heath, admiring the view towards Betchworth and Reigate, and then returned by a shorter route in the cool of the evening.

Saturday, September 8.—A party of twelve met at Chingford Station about 3 p.m., under most pleasant weather conditions, and proceeded across the plain under the guidance of Mr. C. Nicholson. Portions of the plain have been levelled and returfed, and owing to the dry weather each turf was separated from its neighbour by cracks, some of which were an inch in width. Passing along the green ride, a short halt was made under Grimston's Oak, from which an ideal woodland path was taken leading towards Fairmead Plain. Several bushes of Butcher's Broom (*Ruscus aculeatus*) were found, none of the plants, unfortunately, showing either flowers or berries. It is a common plant in the forest, and is the only British shrubby monocotyledon. Further on some young foxgloves were noticed, and the guide drew the attention of the party to a patch of Rest-Harrow (*Ononis spinosa*), growing near the site of Fairmead Lodge. Nothing of the Lodge is now visible but part of an underground brick arch and a long piece of concrete just exposed among grass and nettles. One of the party pointed out that some of the bricks of the arch were shorter and thinner than the rest, and had probably been taken from some older building. Passing through Hill Wood, the party crossed a heathy part near High Beach Church, where Dwarf Furze (*Ulex nanus*) was well in flower, and entered Paul's Nursery. Here the æsthetic sense of the party was touched by the beauty of many roses, some young plants of a species of *Eucalyptus*, and some fine spikes of *Liatris pycnostachya;* their interest was stirred by some pitcher-plants of the genus *Sarracenia*, the tubes containing a liquid which was to all appearance clean and innocent of the usual corpses of decaying insects; and their material tastes were flattered by some very fine blackberries. Leaving the Nursery, and passing out into the open space in front of the King's Oak Hotel, the view over Waltham Abbey and Cheshunt was much appreciated, and the party descended to the "Duke of Wellington" Inn for tea. A pleasant walk back to Chingford Station, *via* Pepper Alley, Leppitts Hill, and the Bury Path, terminated an outing which was unanimously voted most successful.

NEWS FROM THE BRANCHES.

A General Meeting of the Brent Valley Branch was held in the Bird Sanctuary near Ealing on Saturday, September 8. Mr. Wilfred Mark Webb occupied the Chair, and the Committee was re-elected for 1906-7. Mrs. Wilfred Mark Webb was unanimously re-elected Honorary Secretary and Treasurer, and the financial statement showed a satisfactory balance. The Chairman read a report upon the

Bird Sanctuary, which had been more carefully protected than in previous years. The nests of several birds which had not been previously known to breed in the wood were recorded, and a large number of photographs were exhibited.

FORTHCOMING EVENTS.

COUNCIL AND COMMITTEE MEETINGS.

Monday, October 15.—Publications Committee at 5.30 p.m.
Tuesday, October 23.—General Purposes Committee at 5.30 p.m.
Monday, November 19.—Publications Committee at 5.30 p.m.
Tuesday, November 27.—Council Meeting at 5.30 p.m.

The Council of the Essex Field Club have once again kindly extended an invitation to members of the Selborne Society to join in their annual Fungus Foray in Epping Forest. As the arrangements are not yet ready for publication members desiring to attend should at once send stamped addressed envelopes to the Honorary Secretary of the Excursions Committee, Mr. H. H. Poole, 16, Heathcote Street, W.C., who will post them the particulars directly they are ready. The meeting will most probably be fixed for October 20. Tea and expenses, 2s. 6d. per head.

South Eastern Union.—Just as we go to press we are given to understand that the 1906 Autumn Meeting of the South-Eastern Union of Scientific Societies will take the form of a special visit to the "Zoo" on Saturday afternoon, October 27, about 3 p.m. The whole of the arrangements are not yet completed, but a post-card sent to the Autumn Meeting Hon. Secretary, Mr. H. Norman Gray, "Belvedere," Woodville Road, New Barnet, Herts, will bring along the full particulars in due course. Selbornians are cordially invited to attend.

This will conclude our Summer Excursions; the Winter Session will start in November as usual; details will appear in the next number of NATURE NOTES.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Hon. Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

ANSWERS TO CORRESPONDENTS.

J. B.—Sowerby's "English Botany," ed. 3, 13 vols., is published by Messrs. George Bell and Sons. Though not completed to date, swollen by much padding of little value, and far inferior in colouring to the scarce first edition, it is the only work of the kind. Its plates are more numerous and better than those of any other recent British flora, and its text, though to some extent superseded by later editions of Babington's "Manual," is of great critical value.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 203. NOVEMBER, 1906. Vol XVII.

SERVANTS OF THE SOIL.

By Augustus Henry Duvall.

NATURE has many servants, but none are more useful to her than the servants of the soil. They are the chief supporters of all life, for the plant was the first nourishment given to the creatures of flesh and blood. If the lion was, from the very first, a beast of prey, his food must necessarily have been created before he came into existence. The deer lives upon the herbs of the field, so the plant must have come into existence before that which feeds upon it. Nature, then, has placed the plant at the head of the scale of existence. The plant is the oldest, and must needs have the most servants to wait upon it.

The laws of Nature deal almost wholly with the question of life. There is no standing army as there is no common enemy, and yet there is a perpetual warfare carried on—war on the land, war in the water, war in the air. The great law is to keep down the increase of one plant or creature above another, and so maintain the balance of power in the world of Nature. To prevent utter annihilation of one species by another, the individual is either armed with weapons of defence, or rendered difficult to discern by being so painted as to harmonise with the surroundings. Communities, too, are often formed, as in the case of the ants, in which those that are armed constitute a small army to protect the workers.

Perhaps the most universal benefactor in Nature is the poor despised earthworm. This creature, loathed and trodden upon, is to the earth what the plough is to the farmer. It feeds on the microscopic animal and vegetable life in the soil in much the same way as the whale feeds on the animalcula in the ocean, but with the difference that the former passes the soil through its body, while the latter ejects the water

through its whalebone-fringed jaws, its mouth being closed during the operation. Darwin has estimated that earthworms, in some parts of England, turn over and pass through their bodies every year about ten tons of vegetable mould to the acre. The burrows that they make serve to drain the soil and, falling in, keep the mould moving, exposing thereby fresh surfaces to the action of the acids of the soil as well as to the air. Their castings, too, when washed over the surface by the rains or blown about by the winds form a layer of rich soil.

In forest regions these little ploughshares are seldom found, but Professor Drummond has suggested that the white ants may supply the want by their industry. These white ants, or termites, as they are called, have a terrible number of enemies ready to pounce upon them. Their food consists of dead vegetable matter, such as fallen branches and trees, which they riddle with galleries in such a manner as to cause the branch or tree to crumble to dust beneath any ordinary weight.

To protect themselves, the ants carry up earth, not from the surface but from some depth underneath the ground, and plaster it into tunnelled ways. They climb trees for dead branches in the same manner, carrying their tunnels to the very tops of the trees and running them along the branches and twigs, causing the trunks and branches to have a very fantastically plastered appearance.

The service which these minute workers render to the forest is immense. They are a living force, breaking down the largest trees that are wounded to death, and making room for others to take root and grow. The dust that these "hewers of wood" sprinkle upon the ground forms that rich brown humus so characteristic of the forest.

Another humble tiller of the soil is the persecuted mole. This furry little gentleman dwells in runs or burrows, excavated with extraordinary skill and rapidity. In some parts these burrows are only a few inches beneath the earth's surface, while in other places they are yards deep and many rods in length. In a single day the mole will make several yards of these runs, driving the soil before it by small portions for about six yards till it reaches the spot where it throws up its hillock.

As a top-dresser the mole is scarcely to be surpassed. It enriches the pastures with a layer of earth, dug with incredible perseverance from the fattest of the soil beneath. If the mole does destroy the roots of vegetables, it is not for the purpose of devouring them, but to seek the worms, insects, and particularly insect larvæ which they harbour. Immense havoc is made amongst the slugs, snails and caterpillars so detestable to the farmer. The mole is, in reality, the farmer's friend and not the terrible enemy he is believed to be.

Nature has many hirelings employed in ridding the helpless

plants of their foes. Man is ignorant of the wise provisions of Nature simply from want of observation. He attributes the injuries that his plum-trees have suffered to the sparrows, and so he wages a merciless war upon the little birds that are really the protectors of his fruit. It is related of a village in Kent that prizes were given for the heads of sparrows, titmice, and other birds which feed almost exclusively on what the farmer terms "blight." In 1858 the plum-trees in that locality promised an abundant crop, but long ere the fruit was matured the larvæ of the winter-moth, upon which the birds, especially titmice, feed, settled on the trees and consumed almost the entire crop. Had the counteracting influence not been removed this calamity had not befallen the gardener. "Knowledge is power," and can only come through study. Ignorance too often brings trouble and sorrow to man.

The crow and the rook are also much persecuted, yet they rid the farmer of the evils that affect his crops. In the stomachs of crows shot by the farmer have been found nothing but a large number of caterpillars, the true destroyers of the wheat. Rooks, too, have been found to consume only grubs, a few earth-worms, and wireworms, the greatest pest of the field.

Some years ago there was such an enormous quantity of caterpillars upon Skiddaw that they devoured all the vegetation on the mountain, and the farmers were apprehensive they would destroy their crops. The rooks, however, discovered the caterpillars and soon put an end to their ravages.

Bishop Stanley expresses the opinion that there is no more useful race of birds than the owls, since, with a few exceptions, their food consists entirely of vermin and insects very injurious to the crops. Near Bridgewater, in Somersetshire, some years ago, such numbers of mice over-ran the country as to destroy a large portion of the vegetation, and had it not been for a providential assemblage of owls which came from all parts to prey upon the mice, serious destruction to the crops might have occurred.

The common toad is frequently made a martyr of the garden by ignorant persons. It is innocuous and by no means to be loathed and despised, as it destroys and clears away worms and other small vermin which, if allowed to live, would be harmful to the garden.

Trees, too, have their attendants in the world of Nature. The pretty woodpecker, running like a mouse up the brown trunks, and making the wood resound with his hammer-like taps, claims the rambler's attention. Nature guides him to the unsound tree. He never attacks one that is sound. A visit to a sound tree is perhaps made when he is doubtful, but a tap or two convinces him that he must seek his food elsewhere. Instead of shooting him, the woodman should protect him, as

he is the guardian of the woods, preventing the spreading of the pernicious pests that destroy the trees.

Birds and beasts, in devouring the fruits of the trees, are the unconscious agents of Nature. They scatter the seeds upon the earth which the mole and the worm have ploughed and the rain has softened. They were the first sowers and reapers. In their apparently idle life they are doing the will of their Creator: they are obeying the law of Nature. The trees that they sow are given them for an habitation. The birds build in the green foliage, the beasts take up their abode beneath the spreading boughs. Nature pays her husbandmen in food and shelter, and out of the dust of those she has fed and clothed rises the food of her future servants. The balance and harmony of Nature are wonderfully maintained.

A BIRDS' RESTAURANT.

IT is before a sunny drawing-room window, just high enough for safety from the cat of the house. A little wooden table has been fixed to the window sill; it has a raised rim to prevent the delicacies spread upon it from being blown away, or brushed off by careless wings; and a strong wire frame-work, originally intended as a support for creepers, now serves to suspend cocoa-nuts or the cleverly-made little wire baskets which hold the hemp-seed beloved of the tits. The top bar is also a convenient perch for them, and they are able to crack the husks off the seeds by knocking them against it; while their cheery tapping and twittering make a gay accompaniment to the occupations of the kind restaurant keeper. No enemy disturbs them but the burly greenfinch and his wife; this pair are like the fabled dog in the manger, and though they can only feed on *one* of the cocoanuts, or pick seed out of *one* of the little baskets, they allow no tit to come near the restaurant while they are in possession. If one, bolder than the rest, should dare to approach, he is driven off by Mr. and Mrs. Greenfinch with angry flapping of wings.

Further away, other dainties hang from a convenient pergola, and here the rooks are not above stealing lumps of suet. It needed a certain amount of ingenuity for them to invent a way of getting at the suet, as it swings by a string a foot or so long. One would perch on the wooden cross-bar to which the string was tied, and pick up a loop of it in his beak, then he would hold this with one foot while he pulled up a further length of string, and so on till he landed the tempting morsel before him on the bar. And sometimes the sentinel rook, who had been watching the performance from the fence close by, would utter his harsh warning before the other had time to taste the reward of his cleverness, and away they both would fly, leaving the bit of suet to fall and swing once more. C. G. W.

"NATURÆ DISCERE MORES."

THE coming of the Andrena in April is as certain as the coming of the cuckoo. One soft, sunny morning a little Andrena is crawling on the garden path, and on the next, if the weather continues warm, a whole colony of these brown bees is seen busily throwing up diminutive wigwams of soil in all directions, over the grass banks and at the edges of the gravel paths, where their little mounds increase hourly, and make the ground look like some native village in miniature. The appearance of this species seems largely to depend on fine weather, for if cold and damp winds set in they wholly disappear, and even when all circumstances are favourable to them they only stay with us a few days; then they are gone and we lose sight of them until spring comes round again. They usually choose a south aspect for their burrows.

Bees, if not disturbed nor frightened, will allow themselves to be gently stroked whilst on flowers, and are either too absorbed in their own affairs, or indifferent to the sensation, to notice it. Perhaps they enjoy it, in the same way as a frog or toad appreciates being tickled with a leaf.

On a summer's evening, while the Humble-bees help themselves greedily to the honey from the poppy bed, the scarlet petals close slowly and quite perceptibly to the eye. The flowers look as if cut out of satin, so glossy, so intense in colour are they. The bees are in a great hurry for bed time is drawing near; the sleepy poppies tell them that.

Bombus lucorum and *Bombus subterraneus*, with two varieties, haunt the wood. These are noble but fierce-looking insects, and fly with impetuosity, and menacing hum which warns off too close intimacy. I feel no inclination to stroke these handsome bees, clad in velvety brown, striped with orange and gold, or to consider them as playthings, like the friendly little Andrena.

The African marigolds attract a species of long black bee that visits these flowers in numbers, and on which, overcome by the heat, and with the exertions of a long summer's day, they fall asleep, stretched happily out, and slumber for the night. The clear sky above them, the soft air hushing them, the flowers to rest on, what more can the tired bees require? A sleeping bee has such a helpless look it calls for our sympathy; we pass on and leave it undisturbed.

M. C. B.

SELBORNIANA.

"Nature Notes."—Our Editor, Professor Boulger, has unexpectedly been called upon to inspect some forests in Peru, and during his absence the Honorary Secretary of the Selborne Society has undertaken to edit Nature Notes. Attention is therefore specially directed to the announcement that occurs elsewhere in the magazine, to the effect that until further notice all editorial communications must be sent to Mr. Wilfred Mark Webb, at his private address, Odstock, Hanwell, London, W.

A First Edition of the Natural History of Selborne.—The Council invites donations towards the purchase of a copy of the first edition of "The Natural History of Selborne," which it feels sure should form part of the Society's Library. Good examples have been sold for as much as thirty pounds, but the Council has the refusal of an excellent copy in contemporary binding at a price which is less than half that mentioned. Donations should be sent to the Honorary Secretary as soon as possible.

Field Notes.—We have received from Mr. Gordon Dunkerley, of 5, Orchard Cottages, Kingston-on-Thames, *apropos* of the Rev. E. Woodruffe-Peacock's article, some specimens of an ingenious method of classifying and filing notes. It consists of card slips, each with three perforations, and a halfpenny collar stud. Fifty cards will be sent by the inventor for a shilling postal order, or they may be had at from four to five shillings per thousand from the Globe-Wernicke Co. The various subdivisions being threaded on different holes, the set of cards can be opened out like a fan, and readily consulted.

The Yorkshire Naturalists' Union.—The Annual Meeting of the Yorkshire Naturalists' Union will be held at York on Saturday, December 15. Mr. W. Eagle Clarke, F.R.S.E., of the Royal Scottish Museum, will deliver his presidential address, entitled "Antarctic Bird-Life." This will be illustrated by a fine series of lantern slides from photographs taken during the National and Scottish expeditions. Further details can be obtained from Mr. T. Sheppard, F.G.S., the Honorary Secretary, the Museum, Hull.

LETTER TO THE EDITOR.

The Need for Nature Knowledge.

With reference to Mr. Webb's letter on "The Need for Nature Knowledge," I was amused some days ago to be told by a lady that she had been "bitten" by a wasp. She had much to say on the subject of wasp "bites," and when I suggested that wasps "stung" she seemed to think the remark of little consequence. I may add that the lady in question is particularly well informed on most subjects.

16, *Forest Road, Kew.* Amy Astbury.

NATURAL HISTORY NOTES.

429. Field Notes.—The observations by the Rev. Woodruffe Peacock on Field Notes in the October number are excellent, and are sure to be carefully read by would-be recorders of nature. The average person who takes an interest in natural history looks upon it more as a casual hobby than as a serious undertaking, and is quite content to know just a little about flowers and animals, but at once "draws back into his shell" from sheer modesty, and one might almost add "fright," when another naturalist comes on the scene who rattles off Latin names, and knows all about structural details. I am sure that many people are afraid of recording their observations from fear of showing what "beginners" they are. Perhaps this is in part due to the way in which some "advanced" naturalists undoubtedly ignore any but those of their own standard, and thus, unconsciously perhaps, damp the ardour or even hurt the feelings of beginners. And undoubtedly the greater majority of naturalists *are* beginners. I think the real question of note-taking depends on for whom the notes are taken. If they are for yourself make them as scientific and abbreviated as you like: if for others besides yourself, make them slightly more popular in nature. This latter plan has been the one which I have adopted, and will show beginners how easy it is to write interesting nature observations which are quite enough to bring back to memory all the circumstances of the occasion. The following are typical of my notes, which are, of course, not nearly so complete as those of the Rev. Woodruffe Peacock, but which are inserted merely to encourage naturalists to make notes and observations, as recommended by him. For those who like drawing I should strongly advise the use of their pencils in copying objects as much as possible. My notes are liberally interspersed with illustrations.

May 11, 1906.—Banchory, Deeside, Scotland. Found wagtail's nest with four young, in stone way, near railway. Photographed by several friends. Cuckoo heard.

May 14.—Captured early Thorn Moth at electric light. Lochnagar and higher Grampians still deep in snow. Many nests found and photographed each day.

May 22.—Found Petty Whin (*Genista anglica*) on railway embankment, also toadstool, afterwards identified as *Verpa Digitaliformis* ("Solitary, Rare.")

June 6.—The European Chickweed, winter green, *Trientalis europœa*, is very abundant in the woods.

June 15.—Butterwort abundant and in flower.

June 20.—Botanised in swamp, found Buckbean, celery-leaved ranunculus. Captured *Hadena rectilinea*, "Saxon" moth, at night.

June 22.—Hundreds of Bordered White Moths in pine woods.

June 24.—Sweet-scented orchid found (afterwards abundant).

June 26.—Butterfly orchid found. Abundance of vipers, grass snakes, and lizards.

July 7.—Stronachlacher, Loch Katrine. Bog Asphodel abundant. Captured Clouded Buff (*N. Russula*) in afternoon.

July 9.—Butterfly Orchid abundant at Loch Chon, below Ben Lomond. Captured Green Carpet Moth near waterworks (since turned brown!)

July 15.—Saw a large Emerald Moth at Rob Roy's Cave, Loch Lomond.

July 19.—Found a trout at Inversnaid, Loch Lomond, partly eaten by Otter.

August 10.—"Painted Lady" Butterfly seen at Kirkcudbright.

August 22.—Grange-over-Sands. First Polia Chi Moth found (on stone wall, as usual).

August 29.—Photographed glacial boulder pudding stone, and great stone wilderness on Hampsfell.

August 30.—Found rat in treacle pot hung on fruit tree! Sea aster in full bloom on sea marsh.

October 6.—Brambles very abundant still. Damsons a failure in Witherslack.

October 7.—Found starfish washed up by sea. Very rare here. Only the second found in many years.

Grange-over-Sands,
North Lancashire.

R. C. LOWTHER.

430. Effect of an Earthquake in Morecambe Bay.—Tuesday, October 2, was a very quiet, still day here. I went over the sands to Holme Island to see the tide come up, and take photographs of it. For the first few minutes after the tide head had gone surging up the river, there was wild commotion in the waters. But soon they quietened down and became like glass. Ten minutes later I was astonished to see a succession of moderate-sized waves lash the shore. This lasted for a few moments and then subsided. Now I know that frequently a second tidal wave occurs and that a very small one does actually occur at this very spot, for it is near here that the old bed of the river joins the new, but in that case the second "bore" pushes forward in *one* steady wave. This wave disturbance was prolonged, and came from the south-east and not from the south, as the second bore would have done, which, moreover, must have passed several minutes sooner, although I did not see it (but had noticed it the previous day). I went home and mentioned my experience as strange. Now, in to-day's paper I read that an earthquake occurred on that day in Australia, and would probably be felt in England in the early hours of Tuesday. This occurred at 10 a.m.; I can think of nothing to account for it, with the exception of the earthquake. In fact I thought it an earthquake at the time, but dismissed the idea as unlikely. I have known the Bay for years and never seen the like occur before. I daresay I should not have noticed it if the water had not previously been dead calm. R. C. LOWTHER.

Grange-over-Sands, October 5, 1906.

431. Intelligence of Horse.—The following incident, which I noticed a few days ago, may possibly interest those of your readers who believe that animals possess a degree of intelligence beyond what is usually meant by the term "instinct."

In the courtyard of the Wellington Street front of Somerset House, a horse harnessed to a light van was feeding from a nose-bag standing upright upon the ground before him. Some thirty or more pigeons were closely congregated around the bag picking up such seeds as the horse happened to drop, three of the birds, bolder than the others, had perched upon the top edge of the bag and were pecking at the provender, whilst two, bolder still, were inside the bag itself. The next time the horse stooped for another mouthful, these five birds jumped down and joined their fellows. The horse then striking the bag sideways with his nose, upset it, scattering part of its contents upon the paving; the pigeons thereupon at once transferred their attention to the scattered grain, and the horse having cleverly replaced the bag in the upright position, proceeded with his meal without further disturbance.

Whether the horse was actuated by motives of generosity towards the pigeons, or merely by a desire to escape further annoyance from them, I do not pretend to determine. R. T. LEWIS.

432. Cats.—We have a common grey cat who has generally been very attentive to her kittens and has kept them with her for an unusually long time. But this year she brought up a black kitten, born in May, and afterwards had a kitten, very like herself in appearance, in the middle of August. This she deserted at three weeks old, when it could only lap with difficulty, and it got badly chilled by being left alone at night, and looked draggled and miserable, as it was too young to wash itself. The maids fed it, and the six-months-old black kitten suddenly took a fancy to it. He sleeps with it, washes it, fetches it to share his meals, and will leave anything he is doing if it mews, and rush off to it as hard as he can tear. E. H.

Cumberland, October, 1906.

433. A Bat carried off by a Hawk.—One bright morning in August last, about 10 o'clock, while strolling near a pond at the back of a country house in Ireland, I was surprised to see a bat flying in circles over the pond, evidently in pursuit of insects. On the following morning about the same hour, it was working in the same place. After I had been watching it for a few minutes, a hawk flew out of a tree close by, and snapping it up, flew off with it in his talons.

The meeting of a hawk and a bat must be rather a rare occurrence, seeing that they live very much as Box and Cox are reported to have done.

West Kensington, S. E. TENCH.
October 4, 1906.

434. Swallows in a Porch.—Last year (No. 287) I described a swallow's nest in a porch, the door of which is closed till about 7.30 a.m. It may be of interest to say that the swallows returned this spring, and, as we admitted our visitors at once, they had time to bring up two broods. Something went wrong with the fourth egg of the first brood, but all four of the second brood grew up. As last year, the young ones came back to the nest every evening some hours earlier than the parents, who continued feeding them till dusk. A second pair, after trying to possess themselves of the nest in the porch, settled under the eaves above it, and also brought up a family. A sparrow also tried to dispute possession, but was chased away by the swallows after he had brought in some straw and feathers. E. H.

Cumberland, *October* 9, 1906.

435. Needless Slaughter.—The killing of a number of grass snakes and slow worms was, in No. 397, rightly called "needless slaughter." What harm do they do? None whatever, rather the reverse. The grass snake feeds on frogs, mice, lizards and small fish; and the blind worm on slugs. Their lives are innocence itself, and as such should be respected. In cementing a cellar for use the workmen came across a number of newts, "swifts," as they called them, and killed them all. On asking the reason, they informed me they were poisonons, and that if they "flew at a person and bit him," fatal results would follow. This was a case of "needless slaughter." A newt cannot fly at us, its bite is too feeble to hurt us, and it is in no way poisonous. The food it eats entitles it to be ranked amongst useful animals. Another case of "needless slaughter" was the slaying of some 200 bats by workmen in mending a roof. Bats, too, are useful animals. If we wish to encourage the increase of mosquitoes, commonly called gnats, a sure way is to persecute bats. I have seen a single bat catch and eat a hundred mosquitoes in less than a quarter of an hour.

Southacre, *Swaffham*, EDMUND THOS. DAUBENY.
October, 1906.

436. Pythons (No. 415).—Mr. Houghton quotes an article from the *Wide World* of August last, in which it is said that "a missionary in Ceylon was followed by a tiger into a tree, and was in turn attacked and partly swallowed by a large python." The missionary then shot the snake, took a single claw from the tiger's foot, kept it as a trophy and photographed it.

This narrative of "Three in a Tree," ought to squash a wretched naturalist like myself as flat as the traditional pancake, for daring to give publicity to the opinion that "Pythons do not attack such large animals as tigers, and could not swallow them if they did." It does not seem to have occurred to Mr. Houghton that this snake story raises difficulties very hard to swallow, which require more than the digestion of an ostrich to produce comfortable assimilation. On finding that this wondrous experience happened to a "missionary in Ceylon," I turned to the pages of "Mammals, Living and Extinct," by Flower and Lyddeker, where it is stated that the "Tiger does not inhabit Ceylon." This is a bit awkward, and, added to this, the missionary seems to have been "up a tree"!! where he was "followed by a tiger." Flower and Lyddeker are responsible for the declaration that "as a rule tigers do not climb trees; but, when pressed by fear, as during an inundation, they have been known to do so." In this instance the tiger must have been so "pressed by fear" of the Reverend Gent. as to climb up the tree on purpose to eat him. What a fortunate thing it is that the tiger does not turn tail and run away; because if he had he would have spoiled the story.

In the very next number of the *Wide World* there is an account of a python, 30 feet long, that was killed in the Philippines. This huge snake, which is about as long as any that are known to exist, had "swallowed a deer and a wild boar, weighing about 60 lbs." A photograph is given of the skin of the python, and the narrative seems in all essentials practically correct. This snake

had swallowed two animals weighing 30 lbs. apiece—one a small kind of deer, and the other a young wild pig—each about the bulk and weight of a medium-sized retriever; a very creditable performance for the expanding powers of the throat and jaws of a snake whose body was 8 inches in diameter at the thickest part. Now, a tiger 6 feet long from the head to the base of the tail (and they run larger than this) weighs at least 200 lbs. There is a lot of difference between swallowing an animal of 30 lbs., and one of 200 lbs. However, the python seems, according to the story, to have managed to spiflicate this unique Cingalese tiger, and to have, or "partly," got it down its capacious throat. Why the missionary did not shoot the tiger in the tree, history does not say. He must have been a patient man, for the process of swallowing an animal takes a "long time." He seems to have waited till all danger was over, and when the tiger was "partly down" the "huge python's" throat he descended from the tree, and shot the unoffending "reptile" that had saved his life. A shameful case of clerical ingratitude.

Mr. Houghton will, I fear, vote me a sceptic. Some snake stories do require a pinch of salt.

Southacre, Swaffham, EDMUND THOS. DAUBENY.
October, 1906.

437. Tiger Beetles.—In the side of a hill I have come across a vast number of holes made by the larva of the wood tiger beetle (*Cicindela sylvatica*), a beautiful green insect, half an inch long, strikingly marked with spots and dashes of a light cream colour. Most beetles are deliberate and slow in taking flight. This one is so quick in folding and unfolding its wings as to make use of them almost with the rapidity of a fly. Its name, both in the larval and the perfect state, is well deserved; for it is insatiable in its search for prey. The place selected by the larva for its operations is some sunny steep bank, or hillside, free from vegetation; in this it bores a perpendicular hole the size of a quill, eight or nine inches deep, at the mouth of which it lies in wait for any insect that comes its way. In shape the body resembles the letter Z. The two anterior segments are much enlarged, and with the head, which is armed with formidable jaws, exactly fit the hole, and lie even with the surface of the ground. There are two tubercles side by side in the middle of the back, furnished with hooks, which have only to be seen for their use at once to be appreciated. They press against the side of the hole, and keep the body in place. On approaching the holes our presence was discovered by the noise of climbing the hill, and the larvæ retreated out of sight. In a short time, however, they resumed their post at the mouth of the hole, with jaws extended in readiness for prey. We then proceeded to feed them with any insect we could catch. Flies, caterpillars, ants, were instantly seized and dragged to the bottom of the hole to be devoured at leisure. It is difficult to imagine any spot more dangerous to insect life than the side of this hill which these voracious larvæ had selected for their home.

EDMUND THOS. DAUBENY.

October, 1906.

438. Leaf-cutting Bees.—Both J. E. W. and Mr. R. T. Lewis state, in their notes on Leaf-cutting Bees, that after the piece of leaf has been cut out, the bee flies straight away to her nest. I have several times watched these insects at work and each time have noticed that, after the cutting out has been accomplished, they only fly a short distance and then settle on the top of another leaf, or, if I remember rightly, on any other flat surface, such as the top of a wall or post, where they rest for quite a considerable time before flying again, as if they had found the task of cutting the leaf a great exertion.

The Nurtons, Tintern, Mon., J. F. BIRD.
October 8, 1906.

439. Leaf-cutting Bees.—In the last number Lena Shaw asks if the bees gathered the leaves which she observed them carrying. It may interest her and other readers if I relate what I witnessed on the riverside here some weeks ago. When taking a walk one day I rested awhile on a large balk of timber. When doing so a bee came close to where I sat. Its hovering attracted

my notice. There was something green about it which I could not distinguish before it quickly vanished in a curious way. It had evidently been disturbed by my presence. For, presently, another bee came, and disappeared, after a little manœuvering, at the same spot. This time I noticed the green substance was a piece of leaf which it carried edgeways underneath its body. Examination of the wood soon showed a hole into which the bees had gone. Other bees presently came out of the hole without anything and sped away, probably for fresh supplies. A week or two afterwards I found a faulty place in this wooden bulk, about two feet from the bees' entrance hole. I forced a piece of the wood away and came upon the other end of a tunnel which the bees had burrowed just below the surface. Here I came upon the beginning of a series of short tubes constructed of pieces of leaves. They are just about the length and size of a bee when it is rolled up. One end of the tube is convex in form, the other concave. They lie in the tunnel in a line, filling it up, the convex of one fitting into the concave of the other.

In each tube is deposited a grub of their kind before the bees have sealed it up. Sawdust lay about the entrance to the tunnel. It was fluffy and light as air, very different, in this respect, from the sawdust produced by the carpenter's saw! I gather from what I observed that the leaf-cutting bee and the carpenter bee are one and the same. Kirby, the entomologist, says the leaf-cutting bee gets astride of the leaf on its edge, and commences there the cutting-out process. The pieces of leaf which I saw correspond in length with that of the bee.

It is curious to notice how bees use their legs and feet for other things than walking. With them, they open the close-fitting petals of flowers. Sometimes the snapdragon petals sit firmly together, and the bee is forced to push them apart with its feet so as to get its head into the flower. A few days ago I picked up a bee which was starved with cold. As I did so, it held up a fore foot in an imploring, protecting way, as if asking me not to hurt it.

Chelmsford, September 18, 1906. J. GLEDSTONE.

440. Ants.—When the basement of our house was invaded by garden ants early in September, we were advised "to find the Queen." We have, however, succeeded in getting rid of them by washing the floors and shelves with turpentine and a strong solution of carbolic alternately morning and night.

West Kensington. W. C. B.

441. Notonecta glauca in London.—The heavy rain of the night of October 9 produced a pool of water some two yards square in a hollow of an asphalted playground in Old Battersea. On the morning of the 10th this pool contained at least half a dozen water boatmen (*Notonecta glauca*). One insect had an elytron injured as if by a sharp side blow. The wind had been blowing from the south-west. The nearest origin which I can suggest for the visitors is Wimbledon Common. W. JOHNSON.

9, *Lavender Road, Clapham Junction, S.W.*
October 10, 1906.

442. Grasshoppers.—In this district there has been a noticeable scarcity of grasshoppers. In fact, I have not once heard the familiar "chirp" this summer, and have come across very few (and those of a small size) in the fields.

Gravelpits, Gomshall, Surrey, ARTHUR T. CUMMINGS.
October 4, 1906.

443. Salvia verticillata.—For two years there was a fine clump of *Salvia verticillata* on waste ground at Muswell Hill. A botanical friend tells me that it has occurred elsewhere in North London. It can only be classed as a "casual" at present.

68, *North Hill, Highgate, N.* J. E. COOPER.

NATURAL HISTORY QUERIES.

98. Eagles.—About a week ago I was with a party of friends, climbing a rocky heath-covered hill, near St. David's, South Wales, and we had just reached the top when a large brown bird rose from the ground almost at our feet and soared away across the valley, and I at once recognised it as an eagle of some kind, but it seemed to me small for a golden eagle. It had a dilapidated appearance, almost like a bird which had been in captivity. I was much interested in seeing it as I did not know that there were any eagles left in Wales, and I should like to know what kind it could be. It was not an osprey, or fishing eagle, with whose appearance I am familiar.

October 11, 1906. S. M. C.

99. Light-coloured Sparrow.—This morning, as I was walking down Palace Gardens, I saw a bird which I believed to be a sparrow, but it was quite light-coloured—very much the same colour as a wood-pigeon. It was feeding with a number of ordinary sparrows, and seemed quite at home with them. Have any of your readers noticed it; and can anyone account for this peculiarity?

42, *Clanricarde Gardens, W.* E. H. BURLTON.
October 7, 1906.

100. Sphinx convolvuli.—What is the life history of this hawk-moth? It seems to be but partially known. I strongly suspect it is, as in America, double brooded. It appears at the end of August, and also occasionally "in May from pupa that have hibernated." Do the eggs of those that appear in the autumn hatch at once, and do the caterpillars hibernate, or does the egg? The caterpillar is found in June and lives on the bindweed and wild balsam.

October, 1906. EDMUND THOS. DAUBENY.

101. Unusual Casual Plant.—One July day I was riding over a chalky field, bearing no particular crop and apparently given up to a scanty herbage. Suddenly I came upon something that astonished me—a clump of yellow and brown flowers, about the size of an ox-eye daisy, and evidently belonging to the compositæ. From a very early age I have taken a keen interest in botany, and I think I may say that I have a fair knowledge of, at all events, the flora of Hampshire, but I was positive that I had never before met with the like, at any rate in a wild state. I brought my horse to a stand, and for several minutes was lost in surprise and delight. Here was "a find" indeed! On continuing my ride, I afterwards came upon another fifteen or twenty clumps of the same plant, distributed at intervals over this, perhaps thirty acre, field. I pondered the subject for some time, but could get no light upon it, or find mention of such a plant in my handbook of botany. I have since, however, discovered it to be (with scarcely a shadow of doubt), identical with *Rudbeckia Newmani* of the garden. How, I ask, are we to account for the presence of these plants in such a situation? Even had there been but one specimen the problem would have been a difficult one, for the field was too remote from any human habitation to allow of its being an "escape," but when we consider this comparatively wide distribution, the question becomes a still more puzzling one. If any reader is sufficiently interested in the subject to give an opinion, I should be extremely glad.

Ropley, October 5, 1906. MARIE S. HAGEN.

ASTRONOMICAL NOTES FOR NOVEMBER, 1906.

Jupiter rises at 8$\frac{3}{4}$p.m. on November 1, and four minutes earlier each night. Near moon on November 6.

Saturn will be visible during the evenings. Sets at midnight on November 15. Near moon on November 23.

Finlay's comet will be nearly stationary in Cancer, but will appear very faint in small telescopes during November.

Shooting stars should be looked for on mornings of November 15 and 16, and evenings of November 17 to 21. W. F. D.

REVIEWS AND EXCHANGES.

PENTACRINUS, ASTERIA. × ½ (After Wyville Thomson, from "Cambridge Natural History," by the courtesy of Messrs. Macmillan and Co.)

The Cambridge Natural History, Vol. I. Macmillan and Co. Price 17s. net.

When we see the excellent character of the work we feel we must refrain from grumbling at the slowness with which this standard work is making its appearance. Though first in systematic order, the present volume is the ninth in order of appearance, so that with one more, that on Spiders and Crustacea, the work as planned will be complete. The restriction of authorship to workers connected with the University of Cambridge cannot be said to be felt when it permits of the co-operation of four such specialists as the writers of this volume. Professor Marcus Hartog, of Cork, treats of the Protozoa in the first 162 pages of the volume, and his two preliminary chapters are of the very deepest interest to the general biologist. Though he does not accept Professor Ray Lankester's classification in its entirety, we note that he includes the Myxomycetes, while *Eozoön* is dismissed in a brief foot-note. Miss Sollas, of Newnham, treats of the Sponges or "Porifera" in about 80 pages, giving special attention to British and to fossil forms. A summary in a single page of our knowledge of the formation of flint is a masterpiece of lucid condensation. Professor Hickson, of Manchester, deals with the Cœlenterata and Ctenophora in 180 pages—none too many for the complexity of the subject—and it falls to his lot to summarise the evidence as to the origin of coral-reefs. Lastly, Professor MacBride, of Montreal, has assigned to him the Echinodermata, which occupy nearly 200 pages. Our common starfish, *Asterias rubens*, is taken as a type and described at

length. Of the illustrations, numbering nearly three hundred, none are more beautiful than those reproduced from Wyville Thomson's "Depths of the Sea," one of which we are permitted by Messrs. Macmillan to reproduce. As may have been gathered from this necessarily brief notice, though it appeals less than some other volumes to the mere collector, this portion of the work yields to none in its zoological importance.

Books and Portraits illustrating the History of Plant Classification exhibited in the Department of Botany. British Museum (Natural History). Special Guides: No. 2. Price 4d.

The exhibition of books and portraits illustrative of the history of systematic Botany in the Botanical Department, is a most interesting special supplement to that dealing with Natural History in general, on the ground floor of the same Museum; and it was most desirabie that a guide-book should be issued explaining the series to the general public. Dr. Rendle's article in a recent issue of the *Journal of Botany* afforded an excellent basis for such a guide, and we cannot help thinking that this present publication is too much a reprint of the labels on the books. Thus the names of Morison, Linnæus, De Candolle and Brown, each occur twice, in large type, sometimes on one page, and we are startled by the statement opposite an obviously recent uncoloured reproduction of Ehret's plate illustrating the Sexual System, that "this is the original." The portrait of Robert Brown alone is well worth the price of the pamphlet; but that of Linnæus is less successfully reproduced, whilst the one chosen is not the most pleasing representation of Ray. Just at the time when this little book was in preparation, we were examining Roubiliac's bust of the great Essex naturalist in the library of Trinity College, Cambridge, and remarking how feeble an impression of that work of art was given by the cast at the Linnæan Society's rooms, and what a much better portrait than any yet published could be made from the original.

The Romance of Plant Life. By G. F. Scott Elliot. With 34 illustrations. Seeley and Co. Price 5s.

Undouhtedly there is much of romance underlying the dry details of science, and presumably it is well to attract the young to the careful and systematic study of Nature by means of unsystematic gleanings of her more romantic aspects. The danger in such popular science is that, falling into the hands of untrained, uncritical men of letters, it may cease altogether to be scientific by failing to be accurate. There is, however, no such danger with Mr. Scott Elliot. He is desultory, gossipy, we might almost say, but full of miscellaneous information, entertainingly imparted; but he knows his subject; his scientific names are accurate; he quotes references, and he has a good index. Of the very varied but excellent illustrations we have, by Messrs. Seeley's permission, chosen for reproduction here the title-page of Parkinson's *Paradisus*, near the centre of which, just above the head of Adam, appears the Barometz or Scythian Lamb, the centre of one of the most romantic stories of the plant-world.

The Romance of Animal Arts and Crafts. By H. Coupin and John Lea. With 27 illustrations. Seeley and Co. Price 5s.

The authors of a book on the arts and crafts of animals have a somewhat difficult task before them, since they inevitably provoke comparison with that favourite of our own boyhood, Mr. J. G. Wood. So many and so startling are the advances made in our knowledge of the habits of animals of late years that the authors of this work have succeeded in presenting us with an exciting and mostly novel story. It is classified not by the structure, but by the habits of the animals, miners, masons, mound-builders, carpenters, trappers, spinners, raft-makers, potters and weavers, being dealt with in turn. Of the illustrations, the frontispiece, which we are permitted to reproduce, showing *Bettongia penicillata*, the Brush-tailed Rat-kangaroo building its nest, is, we think, the best.

PARADISI IN SOLE
Paradisus Terrestris.
or
A Garden of all sorts of pleasant flowers which our
English ayre will permit to be nourished vp:
with
A Kitchen garden of all manner of herbes, roots, & fruites,
for meate or sause vsed with vs,
and
An Orchard of all sorte of fruitbearing Trees
and Shrubbes fit for our Land
together
With the right ordering planting & preserving
of them and their vses & vertues
Collected by John Parkinson
Apothecary of London
1629

THE GARDEN OF EDEN.

(From "The Romance of Plant Life," by the courtesy of Messrs. Seeley and Co.)

BRUSH-TAILED KANGAROOS (*Bettongia penicillata*) BUILDING A HOME.

From "The Romance of Animal Arts and Crafts," by the courtesy of Messrs. Seeley and Co.)

FROG'S SPAWN AND TADPOLES.

(From "Every Boy's Book of Natural History," by courtesy of the Religious Tract Society.)

Every Boy's Book of British Natural History. By Percival Westell. With chapters on Nature-photography and 109 original illustrations by the Rev. S. N. Sedgwick, M.A., and an Introduction by Lord Avebury. Religious Tract Society. Price 3s. 6d.

Mr. Westell is now well-known as a popular writer and lecturer on Natural History, and boys have for generations delighted in such books as this, giving much information about living things in simple language, and with plenty of such excellent pictures as that of frog's-spawn, which we are permitted to reproduce

here. There are here, moreover, instructions in the art by which such pictures can be produced. Unfortunately the pictures outrun the text and some never get described at all. We should, for instance, have been glad to learn what is meant by the title "Hybrid Lime tree" applied to one of the illustrations. Mr. Westell—very rightly, as we think—does not confine the term "Natural History" to the Animal Kingdom.

Reading and its Surroundings. Homeland Association. Price 1s. net.

With an ordnance map of the country from four to six miles round, many good illustrations, and two hundred pages of letterpress, this "Homeland Handbook," which has been adopted as their "Official Guide" by the Corporation of Reading, is an excellent and cheap example of the series to which it belongs. Silchester and the magnificent collection of Roman remains in the Reading Museum, and Miss Mitford and Three-Mile Cross are, of course, prominent topics. We are rather surprised, however, to find no picture of Southcot Manor, the headquarters of Essex during the siege, and no mention of Mr. George Simonds, the Reading-born artist of several of the local monuments, or of the fossil oysters at Bob's Mount, which are stated, on an old map, to be the shells of those eaten by the Danes during the warfare with them in the days of Alfred.

A Crystal Age. By W. H. Hudson. Second Edition. T. Fisher Unwin. Price 6s.

Mr. Hudson was first recognised as a born naturalist and observer, and has since been acknowledged as a master of style. That this work has gone into a new edition is some faint index of its real value.

Lantern-Slide Making and Exhibiting. By John A. Hodges, F.R.P.S. "Focus," Photographic Manuals. Price 6d. net.

This is a thoroughly practical little book by one who knows what he is writing about.

Received: *Erklärung der Gravitation, der Molekularkräfte, der Wärme, des Lichtes, der Magnetischen and Elektrischen Erscheinungen*, von Dr. Johann Sahulka; *Board of Agriculture and Fisheries—Leaflet No.* 167, *Ducks and Duck-Breeding; No.* 168, *Hints on the Formation of Permanent Pastures; No.* 174, *Tree Root-rot* (*Armillaria mellea*); *No.* 175, *The Use of Waste Organic Substances as Manure*: *Bird Notes and News*, *Vol.* 2, *No.* 3; *The Plant World* for August; *The Nature-Study Review* and *The American Botanist* for September; and *Knowledge*, *The Museum Gazette*, *The Naturalist*, *The Irish Naturalist*, *The Animals' Friend*, *The Animal World*, *The Agricultural Economist*, and *The Estate Magazine* for October.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

Until further notice all editorial communications must be sent to Wilfred Mark Webb, Odstock, Hanwell, London, W.

New Members.—

Ealing Branch.—G. W. Pearce, Esq.

Hampstead Branch.—Mrs. Walter Bentley.

Library.—The Honorary Librarian will attend at 20, Hanover Square, rom 6 p.m. to 6.30 p.m., on the evenings of November 19 and December 17, for the purpose of issuing books to members.

Nature Study Prize.—A prize of half a guinea will be given for the best collection of twenty autumn fruits (properly mounted and accompanied by a description indicating what points of interest the specimens illustrate) sent in to the

Honorary Secretary (at Odstock, Hanwell, London, W.), on or before December 20, by any pupil of a secondary school in the London Postal District, or in any locality where there is a Branch or Junior Branch of the Society.

Prospectus.—Copies of the new edition of the illustrated prospectus can be obtained from the Honorary General Secretary, or from local Honorary Secretaries. Members are invited to distribute them among their friends.

EXCURSIONS.

Saturday, September 15.—On this day fifteen members and their friends went to Kempsing, and walked thence, under the leadership of Dr. A. C. Hinton, through Seale Chart, a well wooded piece of common land where Mr. Harrison kindly pointed out a splendid view of the Weald, at an altitude of about five hundred feet above sea level. After examining an adjoining sandpit the party made its way, by road, to Ightham Mote. This is the finest specimen of a moated house in the south of England, and is not unlike its neighbour, Hever Castle, in its general outlines. The old Hall and Chapel are still perfect. It belonged, in the reign of Henry II., to Ivo de Haut, and in 1478 to Richard de Haut. It was next held for some time by the Cawne family, and the oldest portions existing were probably built by Sir Thomas Cawne. In 1485 it was restored to the de Hauts by Henry VII., and in 1521 was purchased by Sir Richard Clement of Milton, who in turn disposed of it in 1544 to Sir John Allen, and his descendant, Charles Allen, sold it, at the end of Queen Elizabeth's reign, to Sir William Selby. Several fine monuments with effigies of the Selby family are now to be seen in Ightham Church. After tea at "The George and Dragon," a visit was paid to Mr. Harrison's Museum, where the owner showed his collection of flint implements, including many fine specimens from "Oldbury Hill," an ancient British settlement in the close vicinity, also the teeth of *Elephas primigenius* and *E. antiquus*, from the pleistocene gravel beds. The eoliths received much attention, and would have afforded material for many hours of examination and argument if these could have been spared. The return journey was made from Wrotham Station.

Saturday, September 22.—Attracted by the beauties of the district and the well known ability of the guide, twenty-seven members and friends assembled at Woldingham Station. Proceeding up the long hill above Marden Park, some of the famous Shire horses bred by Mr. Greenwell were seen. At the top of the hill a halt was called while Mr. C. M. Mülhberg pointed out the various objects of interest in the extensive view obtained from this point. The view comprises the large tract of country from the Crystal Palace in the north, to East Grinstead in the south, Sevenoaks in the east, and Ashdown Forest in the west, while the North Weald stretches across the picture. The party then visited Woldingham Church, said to be the smallest and highest in Surrey; here Mr. Mülhberg drew attention to the curious inscription on the tombstone of a famous fraudulent bankrupt of the date of 1892. "Charity covereth a multitude of sins." Proceeding hence through country lanes between hedges covered with blackberries and the ruddy fruit of the black bryony, the party was frequently afforded broad views of the hills and valleys so typical of this part of Surrey. After tea in the open air at Botley Cottage, the members proceeded to Oxted Station; it was in this part of the walk that the chief botanical find of the day was made, in the shape of several clumps of deadly nightshade (*Atropa belladonna*), well covered with the glossy black berries which have such a fatal attraction for children, on account of their resemblance to cherries. This is the most dangerous of Britain's poisonous plants, but fortunately it is by no means common. A rose-bush was also noticed covered with the curious growths commonly called "robin's pincushions," several occurring on each twig. At the conclusion of the walk a hearty vote of thanks was passed to Mr. Mühlberg on the proposition of the Honorary Secretary (Mr. Webb), seconded by the Excursions Secretary (Mr. Poole).

Saturday, September 29.—On the occasion of this, the last ramble of the summer session, the weather in town during the morning was so foggy and unpromising, that only seven members assembled at Rickmansworth. These

were, however, rewarded with brilliant sunshine and a charmingly varied walk. The first part lay through Rickmansworth Park, which is well known to most Selbornians, and is notable for its fine trees. Many of these show spiral torsion of the trunks, particularly the Spanish Chestnut, while one lime covers a remarkably large area of ground. Striking hence past Loudwater Park, many species of fungi were found and various forms of leaf galls were pointed out. In one field the mullein grew plentifully and several members collected its seed for home culture. On reaching the Chen stream many trout were seen, and at the keeper's cottage a large pike was shown that had just been caught in a wire snare. Along the banks of the stream monkey-musk and forget-me-nots were still blooming. On leaving the valley the way led through a fine beech wood on the slope of the hill, and here the effect of the sunshine on the tall straight trunks was much admired. After tea at the old "Red Lion Inn" at Chenies, the party walked through the woods to Chalfont Road Station. The guide on this occasion was Mr. H. H. Poole, the Honorary Secretary to the Excursions Committee, and all the arrangements worked with the smoothness which members have learned to expect from him.

FORTHCOMING EVENTS.

COUNCIL AND COMMITTEE MEETINGS.

Monday, November 19.—Publications Committee at 5.30 p.m.

Tuesday, November 27.—Council Meeting at 5.30 p.m.

EXCURSIONS.

Saturday, November 10.—The British Museum (Natural History) South Kensington. Meet in the Central Hall at 2.15 p.m. Dr. A. Smith Woodward, F.R.S. (*Keeper of the Geological Department*), has kindly consented to give a demonstration on the "Fossil Mammals of Australia and South America."

Saturday, November 17.—Visit to a private collection of Birds' nests and eggs, by kind permission of Mr. R. H. Read, M.B.O.U. Meet at Camelot, 8A, South Parade, Bedford Park, W., at 2.30 p.m. The party is limited in number, and tickets must be obtained from the Excursions Secretary before November 15.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Hon. Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

ANSWER TO CORRESPONDENT.

Donald Mathews.—*Ammophila arundinacea*, the Sea Marram, fairly abundant on our coasts, and certainly indigenous.

1. All communications for NATURE NOTES must be authenticated with the name and address of the sender, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. The Editor cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Acting Editor, WILFRED MARK WEBB, F.L.S., Odstock, Hanwell, London, W.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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Nature Notes:
The Selborne Society's Magazine.

No. 204. DECEMBER, 1906. Vol. XVII.

A STORY OF SEAGULLS.

By C. E. Meade Waldo.

SOME thirteen or fourteen years ago a young herring-gull, still in the down, was caught on a group of rocks called the Kedges, off the S.W. coast of County Cork. The gull grew and flourished and became quite tame, living at liberty about the house and garden of its captors. It remained with them till the following spring, when it flew away and joined the wild gulls, and its human friends thought that they would see it no more.

When the weather began to be cold and stormy, in October, the gull returned as tame as ever, coming to the dining-room window and beating on the glass with its beak to ask for its breakfast and dinner of bread soaked in milk or water. This it has done every year since. Four years ago the gull was accompanied by a young one, which came again. Last winter it returned and stayed on very late into the spring, when three wild ones joined it, evidently trying to entice it away. It paired with one of them, and they tried to build a nest on the rough ground near the house, but cattle and dogs disturbed them so often that they went off at last to the seclusion of the rocks.

The writer expects to hear any day now (October) that the gulls have all returned to their winter quarters and their human friends.

When the original gull was quite young it once got out of the garden into the road, and was caught by some boys who took it home. When they found it was a tame one they brought it back again. It had holes in the webs of its feet, burnt by walking on the hot ashes on the cabin floor, and these holes have never closed up.

SELBORNIANA.

The Letters of John Mulso to Gilbert White.—Mr. Rashleigh Holt-White has recently edited and prepared an introduction to the letters written to Gilbert White by his intimate friend, the Rev. John Mulso. The book, which is to be published by Mr. R. H. Porter, of 7, Prince's Street, Cavendish Square, is now in the press and will be welcomed by all Selbornians when it appears, as is expected, about Christmas time. Readers of Mr. Holt-White's "Life and Letters of Gilbert White," will remember that in it quotations from the letters alluded to above are often given, and that they contain many passages of great interest, owing to the fact that they illustrate the career and character of the father of English Field Natural History, whose memory our Selborne Society perpetuates. We hope to review the book in the next number of Nature Notes.

Coming Educational Conference.—The League of the Empire held a very successful annual meeting at Caxton Hall on November 7. Lord Tennyson, the President, was in the Chair, and among other speakers, were Sir Philip Hutchins, Mr. S. H. Butcher, M.P., Lord Reay, Sir Philip Magnus, and Sir Michael Foster. The latter seconded the resolution to extend a cordial welcome to the representatives of the different Countries and Crown Colonies of our Empire to a Federal Conference on Education to be held from May 24 to June 1, 1907. He most amusingly alluded to the parochial spirit which is rampant in this country and which is to be found, he said, even in the University (Cambridge) with which he had long been associated. Sir Michael pointed out that if we meet with "the parochial spirit in high places, how much more shall we find it in low places." The general opinion of the Meeting was, that although the Congress would be useful to those coming from beyond the Seas, *we* should learn the most from the experience of those who are not trammelled in their educational work as we are by tradition and vested interests. One of the subjects put down on the suggested programme is the "Encouragement of Nature Study in Schools."

Traffic in Wild Birds.—The following extract from the *Islington Daily Gazette*, will be interesting to all Selbornians: "Perhaps no one has a better chance of noting the illegal capture of wild birds than the carriers to whom boxes and crates are entrusted by the bird catchers. It is a common enough sight to see such boxes at country railway stations; but it is usually looked upon as nobody's business to interfere, and the package is sent on its way to the town dealer's shop, where evidence as to when and where the birds were caught is at once lost. The station-master at Frome takes a more public-spirited view of the matter. According to the annual report of the Weston-super-Mare branch of the R.S.P.C.A., a crate containing song birds,

including forty goldfinches, was deposited at Frome Station for conveyance to London. Goldfinches are protected throughout the year in Somerset, and the station master, without waiting to argue the matter out with the police, or write to the papers, liberated all the birds. The catchers threatened an action for damages; probably they were surprised to find themselves prosecuted, convicted, and fined £5 and costs, and to be recommended by the Bench to tell their brethren that the next case would be more severely dealt with."

Birds' Nesting with a Camera.—Students of Natural History were entertained at the Working Men's College on the evening of October 20, with a lecture delivered by Mr. A. J. Wallis on "Birds' Nesting with a Camera." The naturalist photographer—for such is Mr. Wallis—dwelt upon the strange places chosen by many of our feathered friends for their homes, sometimes, he said, it was a furze bush, a hole in a tree, a disused chimney pot, and even a pair of old trousers in a field, as he had once witnessed. The lecturer regaled his audience with many anecdotes of the thrushes, the tits, and the robin, and some very good pictures were thrown upon the screen.

Horticultural Exhibition.—The Board of Agriculture and Fisheries inform us that a Horticultural Exhibition will be held at Mannheim, in the Grand Duchy of Baden, from May to October, 1907. Exhibits from this country will be admitted to the fruit, vegetable, orchid and cactus shows. Applications for information should be addressed to the Office of the Exhibition, Friedrichsplatz, 14, Mannheim, Germany. A copy of the provisional programme can be seen at the offices of the Board, 4, Whitehall Place, S.W.

NATURAL HISTORY NOTES.

443. Alien Plants.—Mr. C. Nicholson, of Hale End, Chingford, is much interested in casual or alien plants, and he would be glad of specimens. If Miss Hagen would send him a plant or two of *Rudbeckia Newmanni*, and Mr. Cooper would do the same (or forward seeds) of *Salvia verticillata* for cultivation, Mr. Nicholson would gladly pay the postage.

444. Alien Plants.—*Erinus alpinus* grows in quantities amongst the Roman ruins at Chesters-on-Tyne. I have often heard the legend that it came up spontaneously after the excavations thirty or forty years ago, and this is mentioned in Dr. Bruce's "Handbook to the Roman Wall"; but in conversation on the spot with a gentleman interested both in archæology and botany, he told me that a friend of his had confessed to having brought seed of this and of other Alpine and Italian plants from abroad, and to having sown them at Chesters and elsewhere. *Erinus* is very easily naturalised. I have often read with amazement the passage quoted from Bentham and Hooker's "British Flora," which says that "*Erinus alpinus* is estahlished as an escape from gardens on old walls, especially on *the Roman wall, on the borders of Yorkshire and Lancashire.* (The italics are mine.) The Roman wall is entirely in North Cumberland and South Northumberland, 25 miles from the nearest point of Yorkshire, and nearly 40 from the nearest point of Lancashire-over-Sands.

Newby Grange, Carlisle. E. Hodgson.

445. The Lining of a Long-Tailed Tit's Nest.—Early in May I found the nest of a long-tailed tit, in a bunch of brambles. Putting my finger inside I felt that it was nearly full of rain-water with several eggs at the bottom, cold and forsaken. I took the nest home and found it was so thickly lined with feathers as to be perfectly water-tight. After pouring out half a basin of water and taking out eleven eggs, I took out the lining and counted the number of feathers of which it consisted, and found that these reached a total of nine hundred and fifty-two. All were feathers of common barndoor fowls, and as the nearest farmhouse was nearly half a mile away from the site of the nest, it is easy to calculate that the industrious little builders must have travelled a total distance to and from the nest of about 900 miles to secure them. This assumes that the birds only fetched one feather at a time, but as I have often observed them with two or three feathers at a time in their bills, this distance is probably three times too much. It is still enough, however, to make one pause before aimlessly "collecting" a structure upon which such infinite pains have been expended.

ROBERT H. READ.

446. Wasps' Nests.—A letter to our Editor on the subject of wasps which appeared in the November number of NATURE NOTES, has reminded me of a recent holiday which I spent at a farm-house near Cold Ash, in Berkshire.

Photograph by W. Lawrence.]

A WASP'S NEST, UNCOVERED.

During my stay, the number of wasps which made their appearance was very large. They caused great inconvenience by their constant attendance at meal times, and the fruit in the orchard suffered from their depredations. Several visitors were stung, and in an adjacent wheat-field, a square of corn had to be left standing because the horses attached to the reaping machine were attacked by the occupants of a nest built in the ground. As a matter of fact no less than seven other nests were discovered in the hedge-rows and banks of the orchard and stack-yard. It was therefore decided to destroy some of them, including the one in the wheat-field. This was done by placing a piece of cyanide of potassium, after dusk, well into the entrance of the nest, and covering it up

with a brick (to prevent the earth from entering) and some turfs. In the morning digging was begun and caused some excitement among the rustics, who did not believe that the poison would work. One old farm hand who assisted, incidentally remarked that "he and whopses was bad vrens."

The nest in the wheat-field, which was perfectly spherical in shape, was removed intact and measured thirty inches in circumference. Afterwards the corn which had surrounded it was cut without further trouble. In the bank of the orchard

Photograph by W. Lawrence.]

A Wasp's Combs.

a very beautiful nest was unearthed, which is shown in our illustration. It had a large root running nearly through the centre, and the original entrance in the bank can be seen in the picture, a little above the nest. Our second illustration displays a number of the combs (in section) as they were built, and part of one removed so as to show the cells, of which some are capped over (with a white covering) and contain "brood," or wasps in the chrysalis stage.

William Lawrence.

447. The Coursing of Hares.—As an instance of the influence of Nature Notes for good in the treatment of the lower animals, permit me to say that a couple of years ago, a letter by a "Naturalist" appeared in its pages, complaining of the unfair conditions to which the hares were subjected at one of the great coursing meetings. That letter was from my pen. Not wishing to be personal, I refrained from giving names or places. I did, however, take a friend into my counsel, and copies of Nature Notes were distributed in this locality. One day, when lunching with one of the stewards of the meeting, Nature Notes was produced, which contained the letter; and my host plumped out as a random shot "did you write it?" "Yes I did, and now you know the 'Naturalist,' let me ask if my complaints are just or not? I am not an enemy to the Nation's sports: but woe betide any of them, if they are blown upon, and voted tame or unfair." In reply to this he owned that what I complained of was justified, and should be remedied. At the meetings since that time, quite a different state of things has prevailed.

November, 1906. Edmund Thos. Daubeny.

We must congratulate Mr. Dauheny and ourselves on the result of his letter, and in this connection we may mention that Mr. Nicholson has sent a cutting with regard to the deer turned out by the Berks and Bucks Hunt, in which the writer says "The instincts of these park-hred creatures have been so perverted by their captive life that it becomes unsportsmanlike to hunt them." There is no doubt but that the deer have a chance of escape if they are able to take advantage

of it, but this cannot be said of the rabbit coursing of which some members of the Council of the Selborne Society were unwilling spectators some little time back in a field near the Ealing Bird Sanctuary. The rabbits used were wild, but were taken suddenly out of a dark box, carried rapidly by the ears for twenty or thirty yards into the centre of a field in which they had never been before, and dropped. The moment that the rabbits were liberated, the dogs were let go, and the result was simply butchery, for the rodents had not a ghost of a chance. In one case, the man who ran out with the rabbit was engaged in pushing it, in a vain endeavour to make it run, when the dogs caught him up. It is interesting to know that some stir was made about the so called working-man's sport, and that it has been stopped. Mr. Daubeny has written a letter on the reprehensible practice of "overstocking" cows in markets, which it would appear still goes on. Such barbarism calls for sterner measures than the verbal denunciation which we can make. It is not a special object of the Selborne Society to repress cruelty, but the Society for the Prevention of Cruelty to Animals does and would prosecute, and its inspectors attend markets in the interests of the animals.

EDITOR OF NATURE NOTES.

NATURAL HISTORY QUERIES.

102. Eagles (Answer to Query No. 98).—Was not the "large brown bird too small for an eagle," seen by S. M. C., a common buzzard, a species by no means uncomman in some parts of Wales, and the female of which is decidedly a big bird?

November 3, 1906. C. T. ROPE.

103. "The Action" of a Woodpecker.—One day last month (October) I saw in a garden near Norwich, a bird coming along on the ground with a singular action, viz., with high, stiff, not to say ungainly, hops. It was a green woodpecker, and its mode of travelling seemed curious in so large a bird. I could see no sign of its having been hurt in any way; it flew away soon after readily enough. We notice them more often on trees; I should like to know whether when on the ground they usually hop in this manner.

Otham Parsonage, Maidstone. F. M. MILLARD.

104. The Odour of Fishes.—I should be very much interested to know if a satisfactory explanation has ever been given accounting for the peculiar smell of fish. M. C. T.

105. Unusual Casual Plant.—(Answer to query No. 101). Marie S. Hagen's discovery of *Rudbeckia Newmanni* is certainly most astonishing, and the only suggestion that seems possible to account for the occurrence of such a plant in such a place is, that a ripe head of seed must have been dropped by someone passing over the down. The seeds of these daisy-like flowers scatter very easily when the ripe heads are dropped or thrown down, and the wind and rain would probably lend considerable assistance.

Hale End, Chingford. C. NICHOLSON.

ASTRONOMICAL NOTES FOR DECEMBER, 1906.

Mercury may be observed as a morning star at the middle of the month near the eastern horizon. *Venus* will be brilliantly visible before sunrise at the close of the year. *Mars* will also be presented in the morning sky, rising five hours before the sun.

Jupiter will be a fine object during the whole night in Gemini; near the moon on December 3rd. *Saturn* will shine as an evening star; near the moon on December 20th.

Many meteors will probably appear during the moonless evenings of December 10th, 11th and 12th.

W. F. D.

REVIEWS AND EXCHANGES.

How to Teach the Nature Study Course, with Suggestions for Teaching it, based on Notes of Lectures to Teachers in Training. By John Dearness. 5 inches × 7½ inches, 206 pages with frontispiece, full page illustrations and figures in the text. Copp, Clark and Co., Toronto. Price 60 cents.

The courses in Nature Study, drawn up by Ontario and Manitoba, are here considered in detail side by side. The grades or years which correspond are dealt with, up to the eighth, by the Vice-Principal of the London Normal School in Ontario, and many most valuable suggestions are offered in each case. There is hardly a topic that can be used in connection with the method of teaching—which is the essence of Nature Study—that does not come in for attention, and teachers will get a host of ideas which will be helpful to them when planning out a course suited to their own country, conditions and requirements. Even more important are the discussions on "What Nature Study is," "Nature Study *versus* Elementary Science," and the "Preparation of the Teacher," which form an introduction to the book. We may, in fact, say that in no other book which we have read during the progress of the movement has a better attitude been taken up, or a firmer grasp of the necessities and possibilities of Nature Study been shown. We are urged (on the last page) to judge the work by quality and not by quantity, and told that "the highest criterion of success in teaching is increase of power rather than of knowledge—of power to observe, judge, act, sympathise, and enjoy."

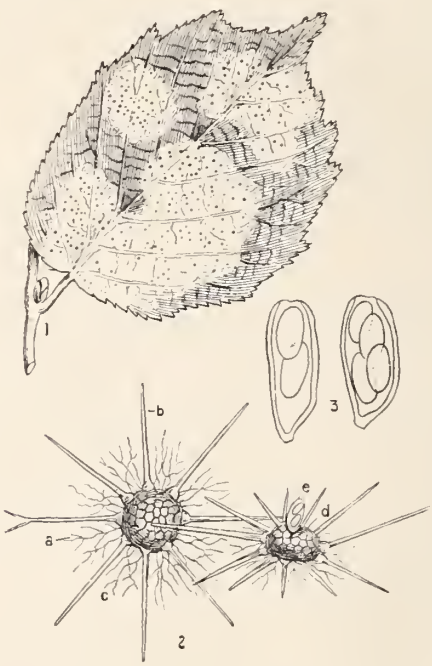
A Text Book of Fungi, including Morphology, Physiology, Pathology and Classification. By George Massee. 5 inches × 7¾ inches, 427 pp., 141 figures. Duckworth and Co. Price 6s. net.

Mr. Massee's latest book will meet with a cordial welcome from all quarters. It summarises, in a masterly way, the vast amount of knowledge with regard to the Fungi, which during the last few years has accumulated, not gradually, but "by leaps and bounds." It also indicates where fuller information may be obtained, and it should prove especially useful to those who, in studying agriculture and forestry, are bound to make themselves familiar with the plants that are not green.

In the introduction, though giving all credit to cytologists, who have worked out the structure and behaviour of the component cells of fungi, Mr. Massee stoutly maintains that the time has not yet come for a classification based on cytology, and that under present conditions the value of systematic classification of plants depends entirely upon its practicability. He points out that its primary object is to enable us to identify species correctly, and that while systematic botany, thus understood, is entirely outside cytology and physiology, these departments of research are dependent on systematic work for a clear indication of what particular species has been the subject of research. No small number of controversies and failures in attempting to corroborate the investigations of others have arisen through mistaking one species for another. Mr. Massee even becomes mildly sarcastic with regard to some schemes that have been propounded, and to the sneers of cytologists, who in ignorance "expect from practical systematic botany, information that systematists do not pretend to furnish."

The first part of the volume deals with some thirty odd topics, such as anatomy, food, colours, parasites on fungi, protection against snails, and fossil fungi. Under the heading of "Ecology of Fungi," the results of some very interesting observations are given. Fungi, as they need organic food, have to follow green plants, but there are unexplained conditions which determine the presence or absence of certain fungi in any particular spot. While a white or pink-spored toadstool may oust the purple-spored mushroom from the beds prepared for it, never will the purple-spored species allow a black-spored fungu

to encroach upon its domain. The black-spored group of toadstools is, in Mr. Massee's opinion, the oldest, and in it poisonous principles and corroding substances are practically absent. In sequence of evolution come the purple, brown, pink, and white-spored groups, in which the poisons increase in number and potency, until in the last group they are most generally distributed. Mr. E. Salmon contributes a chapter on "Biologic Forms," dealing with those races of parasitic fungi which belong to the same species, and are indistinguishable excepting for the fact that each one will only grow on a certain species of plant (or its near allies). We have a case here which is parallel with that of gall-producing insects which are identical, but give rise to very different galls. When giving his personal views on the phylogeny of Fungi, Mr. Massee makes out a good case for their single (as opposed to multiple) origin from the Algæ.



Phyllactinia suffulta, a fungus having superficial mycelium which grows on the surface of the host-plant. 1, a hazel leaf partly covered with the white mycelium of the fungus; 2, fruit of the fungus furnished with spine-like, projecting appendages; 3, asci containing spores. All except fig. 1 mag.

(From a "Text Book of Fungi," by the courtesy of Messrs. Duckworth.)

In a most carefully written chapter in the second part, on "Legislation and the Spread of Plant Diseases Caused by Fungi," Mr. Massee estimates the annual loss throughout the world due to injuries to cultivated plants by parasitic fungi as exceeding £150,000,000. He then expresses the opinion that this loss may be prevented or reduced, and proceeds to show the weak points in the legislation that has been applied to the case, and to make it clear to those who expect much from it that they will be disappointed. The third part of the book consists of a classification, with brief descriptions of the order and families of the Group, or as Mr. Massee dignifies it, Sub-Kingdom of the Fungi.

Entomology, with Special Reference to its Biological and Economic Aspects. By Justus Watson Folsom. 6 inches × 9 inches, 485 pages, 5 plates and 300 text figures. Rebman, Ltd. Price 14s. net.

The aim of this book is to give a comprehensive and concise account of insects, in order to meet the growing demand for a biological treatment of entomology, which often does not rise beyond collecting and cabinets. The volume, though planned primarily for the student, is intended also for the general reader, and it takes but a glance at the pages to appreciate that the author has been successful in his endeavour. Besides the necessary figures dealing with structure, we find a wealth of interesting pictures, such as those showing the changes of the caterpillar into the chrysalis and the developing wings of an emerging butterfly. Others, again, illustrate curious habits on the part of insects, mimicry, the relations of insects with plants, and many questions which one does not usually find in books dealing with classification. Similarly in the letter-press, all sorts of topics of general interest are discussed, for instance :—economic entomology, the relations of insects, the conveyance by insects of diseases that affect human beings, and a consideration of those species which form the food of birds. The extreme intricacy of the subject is well brought out, when it is shown that if a bird destroys a parasitic or predaceous insect it is not necessarily inimical to human interests, for the insect might happen to attack other insects which lived on noxious plants or those of no economic value. The chapter dealing with the origin of adaptations and of species, gives a very interesting and valuable *résumé* of the theories of Darwin, Romanes, Weissman and de Vries, so that there is food for the general student as well as for the specialist. Finally, more than seventy pages are devoted to the literature of entomology, and those selected contributions which contain special bibliographies are marked accordingly.

The Evolution of Man, a Popular Scientific Study. By Ernst Haeckel. 6 inches × $8\frac{3}{4}$ inches. 2 volumes in one. 364 pp., 408 figures. Watts and Co. Price 2s. net.

This is a condensed translation, by Mr. Joseph McCabe, of the fifth and enlarged edition of Haeckel's celebrated book. It is one with which every man and woman with any claim to culture, or the slightest interest in themselves, should be familiar. Of course, there are those to whom the idea that they are in any way connected with the "lower animals" is repugnant, but there are many to whom the truth is unpalatable. The first volume is occupied with the history of individual man or ontogeny, and although the embryology of a number of simple creatures is carefully described, it will require close attention on the part of those who have no previous knowledge of zoology in order to master the intricacies of the subject. The translator has, however, done his best, in his preface, to help the general reader, and the arguments in the second volume in which the racial history or phylogeny of man is discussed, are more easy to follow. There are a few points which even the biologist would like made a little more clear; on page 115, for instance, the permanence of mammary glands (once only found in the female, and by heredity communicated to the males), in both sexes of the higher mammals and man, is given as "a fine instance of the much disputed 'inheritance of acquired characters.'" In the usually accepted sense, "acquired characters" are those gained by the individual during its own lifetime, and with regard to the inheritance of which there is practically no reliable evidence. The chapter on our various predecessors—protist, worm-like, fish-like, with five toes, and ape-like—should prove of particular interest, and these are practically what any modern zoologist would enumerate. Discussion would probably centre round the ancestors immediately preceding the vertebrate type as foreshadowed by the simple and skull-less lancelet. Haeckel gives his own views, as will be evident in the chapter on worm-like ancestors. It has been found that the blood of one kind of animal will in the veins of another act as poison, unless the two are very closely related. In the chapters on ape ancestors, some remarkable experiments are mentioned which show that while human blood is hurtful to the lower monkeys, it has no effect when transfused into the anthropoid apes.

The book is very well got up, and the claim that there is no scientific work, published at a price remotely approaching that for which it is sold, that has so excellent a supply of illustrations, would be hard to upset. It amounts to this, that we can buy what is practically a text book of Zoology, so far as it touches on man and his relations, near and distant, and containing over four hundred illustrations, for 2s. This price ensures that the object is fulfilled of putting Haeckel's work within the reach of all, but one cannot always get a horse to drink even if one brings the water to him.

Camp Fires in the Canadian Rockies. By William T. Hornaday. 6½ inches × 9¼ inches; 353 pages, 70 illustrations, chiefly by John M. Phillips, and 2 maps. T. Werner Laurie. Price 16s. net.

The Director of the New York Zoological Park has written, and the Pennsylvanian State Game Commissioner has illustrated, the account of a holiday expedition to the haunts of the Rocky Mountain goats and grizzly bears. Apart from the charm of the narrative and the striking interest of the photographs, there is a delight in feeling that the actors in the drama are real sportsmen, who would fain see the small number of big game that the license laws allow a hunter to kill still further reduced, and would have the shooting of females prohibited. What is more, although they were allowed to kill five goats, they contented themselves with three, the number that they had previously suggested as being the proper one. They shot no females except in the case of grizzly bears; they left behind no wounded animals; they made thorough use of everything they killed, and, with the exception of one deer, all the animals shot were preserved for important museums.

Many different creatures are described in the volume, and many interesting details are given with regard to them, though the Rocky Mountain goats and the catching of them come in for a large share of attention. Dr. Hornaday believes that the only way to ensure the survival of American Mountain sheep and goats on the Atlantic coast is to have young animals reared to maturity in their home country. He instances the specimen of the Rocky Mountain goat which is now in our own Zoological Gardens at Regent's Park. It was captured in 1898 in the Fort Steele district of British Columbia, and was taken to London by its owner in 1901. Dr. Hornaday also gives some account of the way in which animals travel to the New York Zoological Park, and describes the taking back with him of five young Rocky Mountain goats, which formed the first flock ever seen in a Zoological collection.

A well-known hunting dog named Kaiser accompanied the party on the expedition described in the book, and contributed much towards its success. While the last proofs of "Camp Fires" were being read, the unwelcome news that Kaiser had accidentally been killed by a reaping machine reached the author, who added, in memorium, a page of appreciation of a dog who in "the annals of big game hunting and photography had fairly earned a place."

Received: *The Animals' Friend*; *The Animal World*; *Bird Lore*; *Humanitarian*; *Knowledge*; *The Naturalist*; *The Irish Naturalist*; *The Victoria Naturalist*; *The Plant World*; *The University of Colorado Studies*; and *The Estates Magazine* for November.

SELBORNE SOCIETY NOTICES.

[NOTE.—ALL ANNOUNCEMENTS WITH REGARD TO FUTURE MEETINGS OF THE CENTRAL SOCIETY OR BRANCHES WILL BE FOUND TOGETHER AT THE END OF THESE NOTICES.]

New Members.—*Central Society.*—The following members have been elected: J. E. Turner, Esq.; The Rev. Canon Morley Stevenson, M.A.; H. V. Webb, Esq.

Birmingham Branch.—Ernest S. Rye, Esq.

Hampstead Branch.—Mrs. Walter Bentley.

Library.—The Honorary Librarian will attend at 20, Hanover Square, from 6 p.m. to 6.30 p.m., on the evening of December 17, for the purpose of issuing books to members.

The Honorary Librarian has pleasure in acknowledging the following additions to the Library: "Anglo-Saxon Grave Keys," by John Acutt, kindly presented by the Author; "Harrow Architectural Society's Proceedings for 1902, 1903 and 1906," kindly presented by Ernest A. Nash, Esq.; "The Natural History of Selborne," Jardine's edition, 1830; "The Natural History of Selborne," Everyman's Library edition, 1906, kindly presented by W. Whitaker, Esq., F.R.S.

EXCURSIONS.

Saturday, October 20.—A number of Selbornians took advantage of the kind invitation of the Essex Field Club to join in their Annual Fungus Foray in Epping Forest. Those who accompanied the morning party were the most successful in collecting in the Monk Woods. Here the fly agarics were the most prominent feature, but the less conspicuous species were also plentiful. The members of the afternoon party started from Epping Station and drove to Wintry Wood, where they were fairly fortunate, many species being found which do not occur in Monk Wood, but the number of specimens was not so great. After tea at the "Old Thatched House," Epping, Mr. George Massee described the finds of the day, three new records being added to the Forest Fungus Flora. All these were species of the genus *Lactarius*. Mr. Massee said that each year seemed to be marked by the profusion of a special genus, and 1906 might be described as a *Lactarius* year, just as 1905 was a *Tricholoma* year. Mr. Massee then gave a most interesting address on the "Ecology of Fungi," which was greatly appreciated by his audience. Lack of space forbids an extended account of this, but one item that was of special interest to the non-expert collector must be mentioned. Of the four great groups of agarics, the black-spored series contains no poisonous species, the brown-spored only two or three, while the pink-spored are all poisonous save one species, and the white-spored are all poisonous.

Saturday, October 27.—More than fifty Selbornians took part in the Autumn Meeting of the South-Eastern Union of Scientific Societies, of which the Selborne Society is the largest constituent body. A visit was paid to the Zoological Society's collection in Regent's Park, and in accordance with the excellent arrangements made by Mr. Norman Gray, several parties were formed, each under the guidance of a naturalist. Among the leaders were Dr. Henry Woodward, F.R.S., Mr. G. A. Boulenger, F.R.S., and Mr. Frank Finn, F.Z.S., so that much information was gained by the visitors during the afternoon. Those who had not been to the Gardens for some time were also greatly pleased to see the many and great improvements which have recently been made.

Saturday, November 10.—At this meeting, with which the Winter Session was most successfully begun, Dr. A. Smith Woodward, F.R.S. (Keeper of the Department of Geology), gave a demonstration in the galleries of the British Museum (Natural History). He took as his subject the fossil mammals of Australia and South America, and described in a most graphic manner the way in which the true character of many of the great herbivorous animals had been recognised, as well as their method of life and their carnivorous foes, of which the bones have also been discovered. The true story of the South American Ground Sloths, of which some examples lived until quite recently, and must have been kept captive in the cave where their skins and bones were found, was not the least interesting of those that were told. Dr. Smith Woodward also mentioned birds and tortoises, and touched upon the land connection between South America and Australia which it has been supposed once existed. At the end of an enjoyable afternoon, Mr. Cottam, in most appropriate terms, expressed the thanks of the party (which numbered close upon thirty) to Dr. Smith Woodward for his kindness, and for speaking so that all were able to hear and to understand what he said. The Honorary Secretary seconded the resolution, which was carried with enthusiasm, and Dr. Smith Woodward expressed his pleasure at the cordiality of his reception.

FORTHCOMING EVENTS.

COMMITTEE MEETING.

Monday, December 17.—Publications Committee at 5.30 p.m.

EXCURSIONS.

Saturday, December 8.—Visit to a Fur and Skin Warehouse. Meet at 2 p.m. at 32-33, Queen Street, Cannon Street. Mr. C. M. Mühlberg will give his second and final demonstration on "Zoology in Everyday Life." Inspection of skins in the warehouse from 2 to 3 o'clock: demonstration at 3 o'clock. *This visit is restricted to members, and the party is limited in number. Applications for tickets must be made to the Excursions Secretary before December* 6, *enclosing a stamped addressed envelope.*

Saturday, December 15.—The Whitgift Hospital, the Old Palace, and the Parish Church, Croydon. Meet at East Croydon Station (L.B. & S.C.R.) at 2.30 p.m. Trains leave Victoria at 2.3, and London Bridge at 2.5 p.m. Return fare 1s. 6d.; admission to the Palace 6d. Guides: Mr. A. Jones (Warden of the Hospital), Miss D. Latham, and Mr. John Corbet Anderson. *No tickets are required, but members desiring to attend should send a post-card to the Excursions Secretary not later than December* 13, *so that proper arrangements may be made for their accommodation.* The Hospital dates from 1599; much of the original work remains. The Palace has an interesting chapel, a banqueting hall, and an ancient bell. The Church contains fine Elizabethan monuments.

All communications with regard to Excursions should be addressed to Mr. H. H. Poole, *Honorary Secretary of the Excursions Committee*, at 16, Heathcote Street, W.C.

ANSWER TO CORRESPONDENT.

C. E. R.—(*a*) "An Elementary Text-book of British Fungi" (illustrated), by W. Delisle Hay, is published by Sonnenschein. A beginner would find Worthington Smith's "Guide to the Models of British Fungi in the British Museum" (price 4d.) very useful. (*b*) Sach's "History of Botany," English Translation, Clarendon Press; and (*c*) Weather's "Practical Guide to Garden Plants" (Longmans) would probably answer your purpose.

1. All communications for NATURE NOTES must be authenticated with the name and address of the sender, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. The Editor cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, hooks for review, specimens for naming, &c., should be addressed to the Acting Editor, WILFRED MARK WEBB, F.L.S., Odstock, Hanwell, London, W.

5. For the supply of the Magazine to others than Members, or for back numbers (except in the case of new Members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-91, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.

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